User Manual

GMB-8300

Embedded Gaming System Support 3rd Generation Intel® Core™ Mobile Processor And QM77, 3 Display, Audio, PCIe X16, 2 GbE, 5 COM, 4 USB3.0, 64 x I/O, NVRAM, Flash ROM, 2nd RTC, Intrusion Detection, Optional Authenticate Chip

Ver.	Release Date	Update
1.0	2013.9.20	Release
1.1	2014.02.25	system information updated

Importance : Please do backup system OS image before using

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For technical supports, please send your inquiry to sales@aewin.com.tw

Packing list

Before use this product, please make sure that the following materials have been shipped.

- 1 x GMB-8300 System
- 1 x SATA cable, L/ 200mm (p/n: 46L-SATA11-00)
- 1 x 12V/5V SATA power cable , L/ 150mm (p/n: 46L-IPOW41-00)
- 1 x CD utility

p/n: 46L-SATA11-00	p/n: 46L-IPOW41-00	p/n: TBD

Model Name	**Description**
GMB-8300C	Mini-ITX with Intel® QM77 chipset, 2 GLAN, DDR3 up to 8GB, HDMI, DVI, VGA, LVDS, SATA, COM, PCIe X16 slot

* If any of those items are missing or damaged, please contact with sales representative or distributor

Optional Accessory

Photo	Model Name	
	P/N:	GP002-221
	Mini-DP-to-DVI-D Active adapter	
	P/N:	46L-ICOM38-00
	Dual D-Sub 9-pin COM port card, L/ 250mm, with bracket	
	P/N:	46L-IUSB07-AA
	Dual USB cable, L/ 250mm, with bracket	
	P/N:	46L-IPOW102-00
	P4 4-pin to DC Jack lockable power cable, L/ 200mm	
	P/N:	P/N : GP002-226, Radeon 6760, x6 DP P/N : GP002-222, Radeon 6760, x4 DP P/N : GP002-223, Radeon 6460, x4 DP
	AMD Radeon Graphic card	
	P/N	R135A
	Gaming I/O testing board	
	P/N	46L-ICOM26-00
	R135A I/O cable of GA-P100	

Safety Information

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation Safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

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1. General Information

1.1 Introduction

MB-8300, a Mini-ITX board supporting Intel® Ivy Bridge / Sandy Bridge Mobile CPU with integrated Intel® QM77 Express chipset. Onboard display includes HDMI, DVI-D, VGA and 24-bit dual channel LVDS and two DDR3 SO-DIMM supports a maximum of 16GB DDR3 1600 of system memory.

MB-8300 delivers flexible expansion slots allowing customers to install one PCI-Express X16 card and two Mini-PCIe cards. It is built with a SIM card holder capable of installing a SIM card with a Full-size Mini-PCIe 3G module for wireless connection. For half-size Mini-PCIe socket it also supports mSATA SSD as storage device (Optional). Furthermore it comes with a PCI-Express X1 slot that can be paired with AEWIN's riser card for an additional 1 ~ 3 PCI slots for various application.
MB-8300 is designed with a video/audio encode chip that supports 4-channel inputs under D1 resolution at real-time. AEWIN will provide software development kit allowing easy application development.
On the I/O front the MB-8300 provides plenty of connectivity. 2 x Intel® i211AT GbE LAN controller, 1 x RS232/422/485 & 3 x RS232, 4 x USB3.0 + 6 x USB2.0, HD Audio, PS/2 Keyboard/Mouse, 4 x SATA with RAID O/1/5/10 and a LPC pin-header supporting AEWIN's TPM module for the added information protection. The MB-8300 accepts a wide range 8V ~ 32V DC input suitable for a variety of applications in digital signage, POS, kiosks, and factory automation.

About AEWIN

AEWIN offers reliable and solid products which are produced under Management System Standards: ISO9001-2000 Certificate. The certificate keeps us focused on our quality objectives of management and environmental production. Its willingness to customize standard products for meet unique customer needs makes AEWIN different. All ODM projects are welcome. Years of experiences enables AEWIN to fulfill the customer's vision, by delivering products to exact specifications. AEWIN R&D team is proud of its strong engineering background. R&D professionals account for 25% of the AEWIN workforce. We focus on developing new products for both emerging and established markets

For more information about OEM/ODM, please contact us :

Email: sales@aewin.com.tw TEL: +886-2-8692-6677

1.2 Specification of board and Gaming I/O

System Specification

System	
From Factor	Mini-ITX motherboard
CPU	Intel® Core™ i7/i5/i3 Processor Mobile processor, Ivy Bridge, socket 988B. Intel® Core™ i7-3610QE, 2.3 GHz, Qual-Core/45W Intel® Core™ i5-3610ME, 2.7 GHz, Dual-Core/35W Intel® Core™ i5-2510E , 2.5 GHz, Dual-Core/35W Intel® Core™ i3-3120ME , 2.4 GHz, Dual-Core/35W Intel® Celeron® B810 , 1.6 GHz, Dual-Core/35W
Chipset	Intel QM77 Express chipset
Memory	2 x 204-pin DDR3 1333/1600 MHz / SODIMM up to 16GB, w/o ECC support
BIOS	AMI SPI BIOS
SSD	Half-size Mini-PCIe socket support mSATA SSD
Watchdog timer	255 levels, 1 ~ 255 sec
Expansion	1 x PCI-Express X16 slot 1 x PCI-Express X1 (work with riser card for PCIe X1 or PCI 32-bit/33 MHz expansion) 1 x Full-size Mini-PCIe socket w/ USB, PCIe signal 1 x Half-size Mini-PCIe socket w/ USB, PCIe or SATA signal (Default is SATA signal) **Note: Need to inform us to modify hardware before ship if want to Half-size Mini-PCIe support PCIe signal**
Board Size	170mm x 170mm
System Dimension	320mm x 200mm x 83.2mm
Operating Temp.	0°C~60°C (32°F~140°F)
Storage Temp.	.-20°C~80°C (-4°F~176°F)
Operating Hum.	10%~90% (non-condensing)

Display	
Chipset	Intel® processor integrated
Display interface	1 x external HDMI 1.4a
	1 x external VGA
	1 x external DVI-D
	1 x internal 24-bit Dual Channel LVDS

I/O	
Series Port	Internal : 1 x RS232/422/485 (COM2), 2 x RS232 External : 1 x RS232
SATA	2 x SATA 3Gb/s + 2 x SATA 6Gb/s, w/ RAID 0/1/5/10
USB	External : 4 x USB3.0 + 2 x USB2.0 Internal : 4 x USB2.0
Ethernet	1 x Intel® 82583V PCIe controller 1 x Intel® 82579LM PHY support WOL & Intel® AMT 8.0 support
Audio	Line-in/out , Mic-in
Digital I/O	8-bit GPIO interface (pitch : 2.0)
LPC	1 x LPC 2 x 10-pin header for Optional TPM module
Others	2 x cooling Fan header (Smart fan support) , 1 x PS/2 keyboard/Mouse 1 x Front Panel header for power on/off, reset, HDD/power LED indicator 1 x LVDS Backlight/inverter pin-header (w/ house) 2 x 12V/5V DC out for HDD , 1 x SMbus (5-pin wafer)

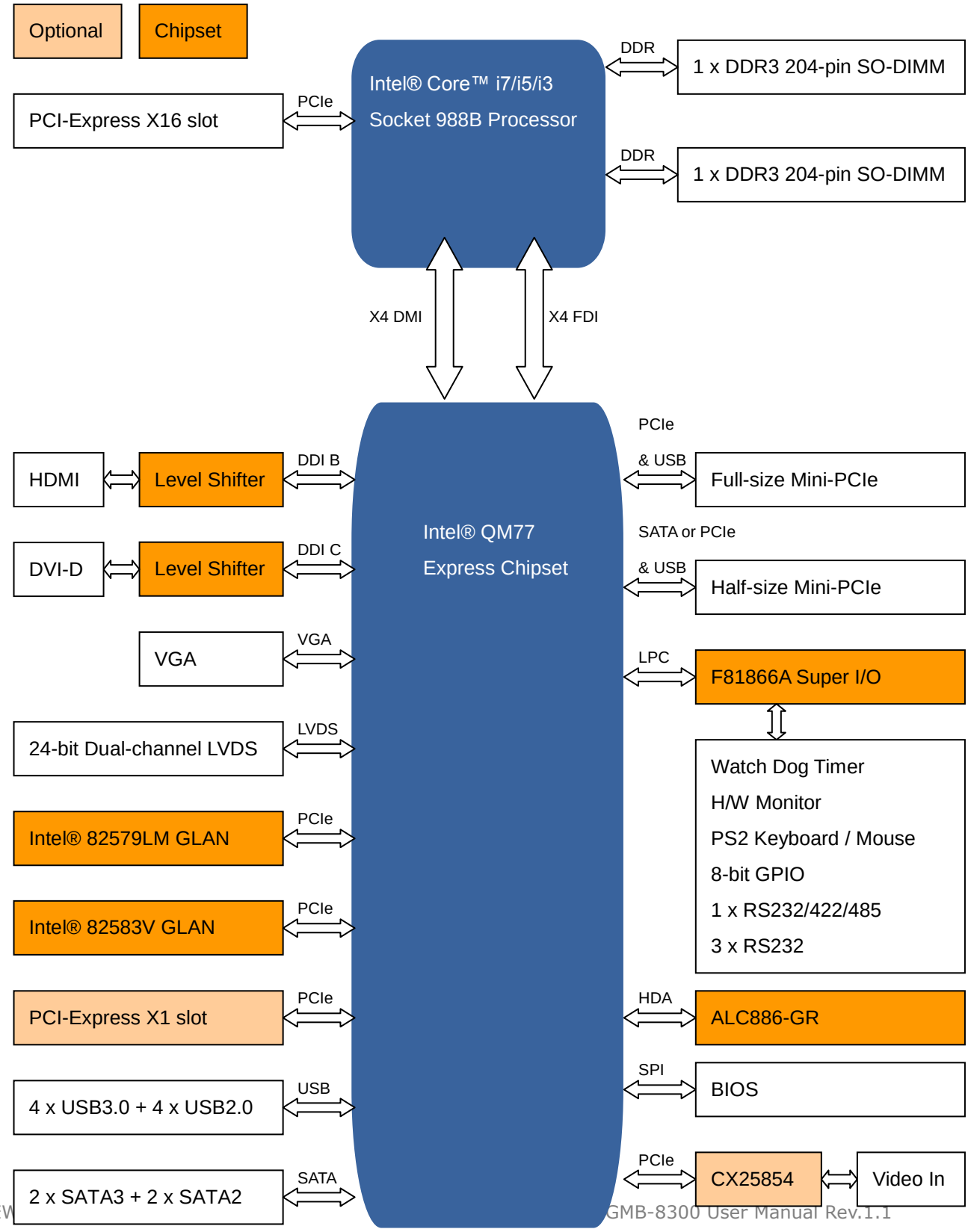
Power	
Power in	Wide range DC 8V ~ 32V input (AT/ATX mode select by jumper)
Connector	1 x internal P4 4-pin power connector

Note：All specifications and photos are subject to change without notice

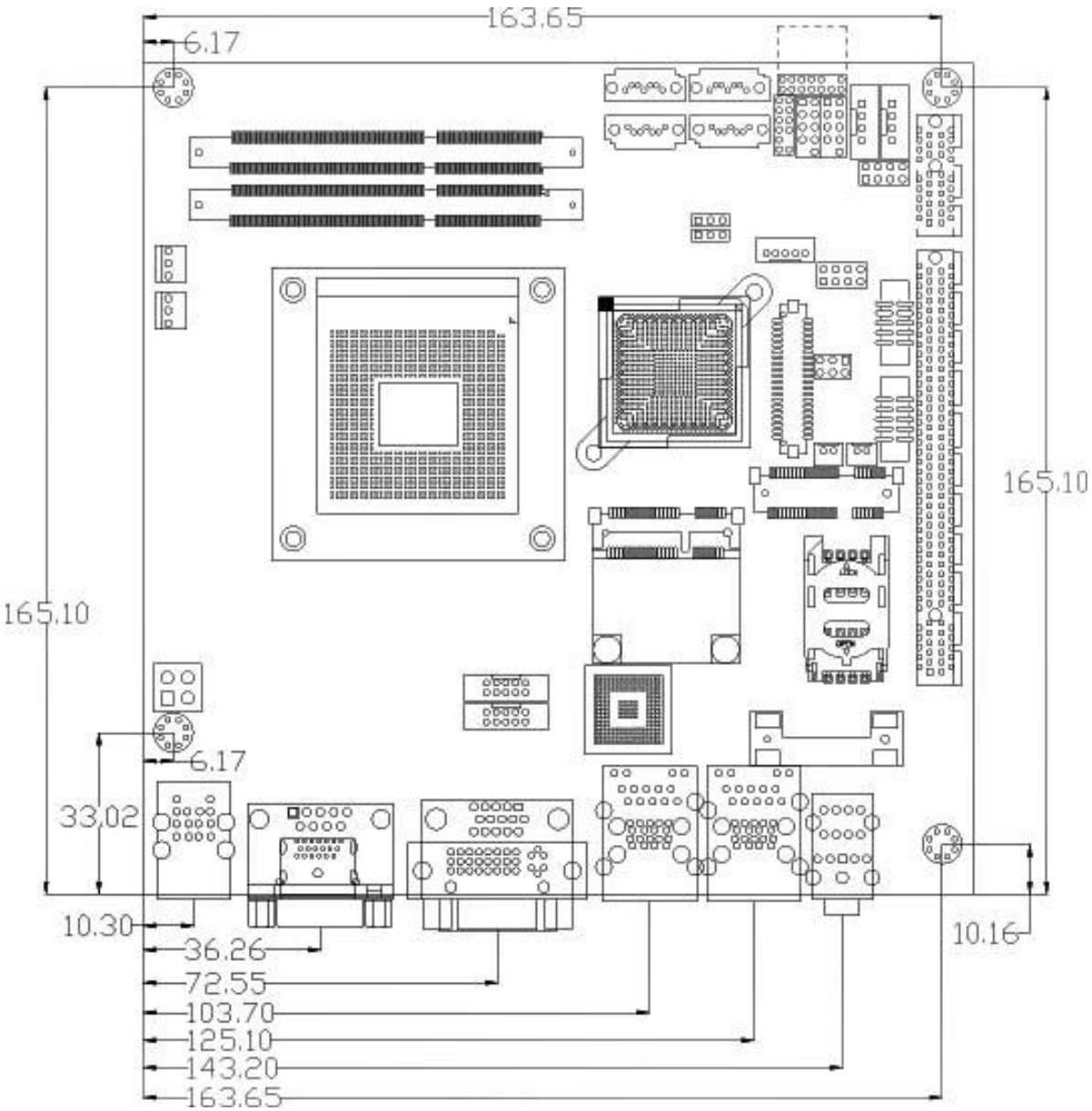
Gaming I/O Specifications

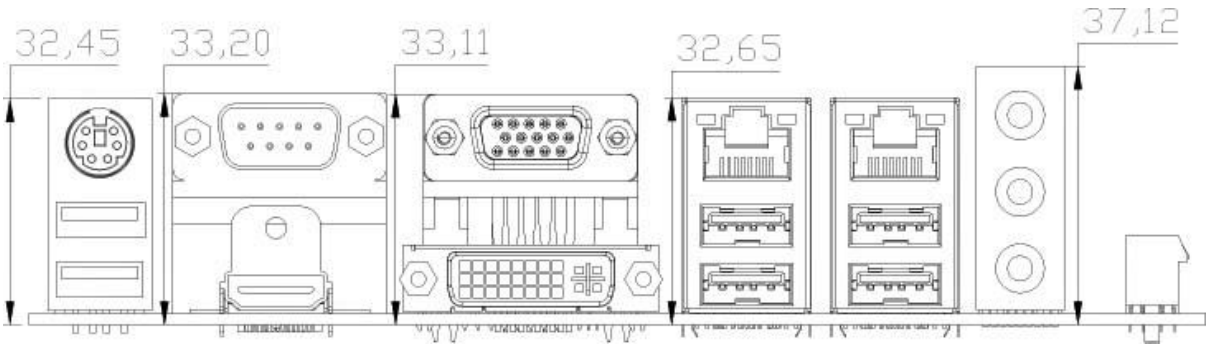
Gaming	
ROM	2MB Flash ROM
NVRAM	On-board 1MB battery backed SRAM (Optional 2MB)
Timers	Programmable timer with timeout interrupt
Watchdog Timer	255 levels timer interval, (1sec. to 255min.), setup by software.
Intrusion Detection	Operates with and without system power 6x Intrusion detection inputs Logs date/time of last 30 events Events include door status, system resets/brownouts On-chip EEPROM backup
Digital I/O	- 32x photo-couple isolated input - 32x 500mA current sink output
O/S	Windows XP(e) Linux
Security	
Security	FPGA Authenticate Chip (Optional) Boot ROM
Mechanical and Environment	
Environmental	Operating Temperature: 0 – 60 ºC (32 ºF – 140 ºF) Storage Temperature: -20 – 85 ºC (-4 ºF – 185 ºF) Relative Humidity: 10-85 % RH, non-condensing
Compliant	FCC/CE Class A
Dimension	163mm (L) x 107mm (H)
Applications	
Main Application	Video slot machines (Class II/III) Video lottery terminals Amusement game machines Master unit of roulette machine Downloadable gaming terminal High end vending machines ATMS/Cash machines;

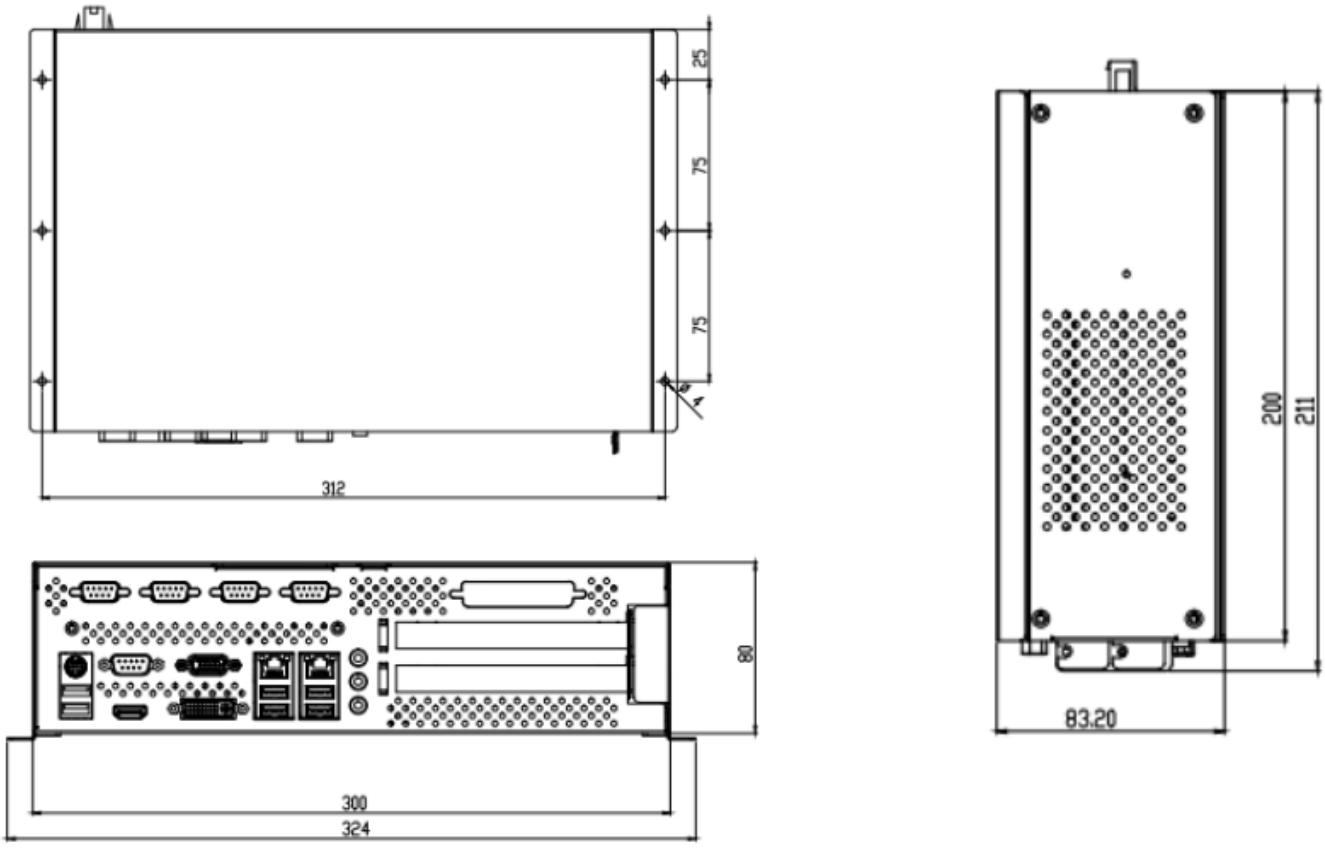
1.3 Block Diagram



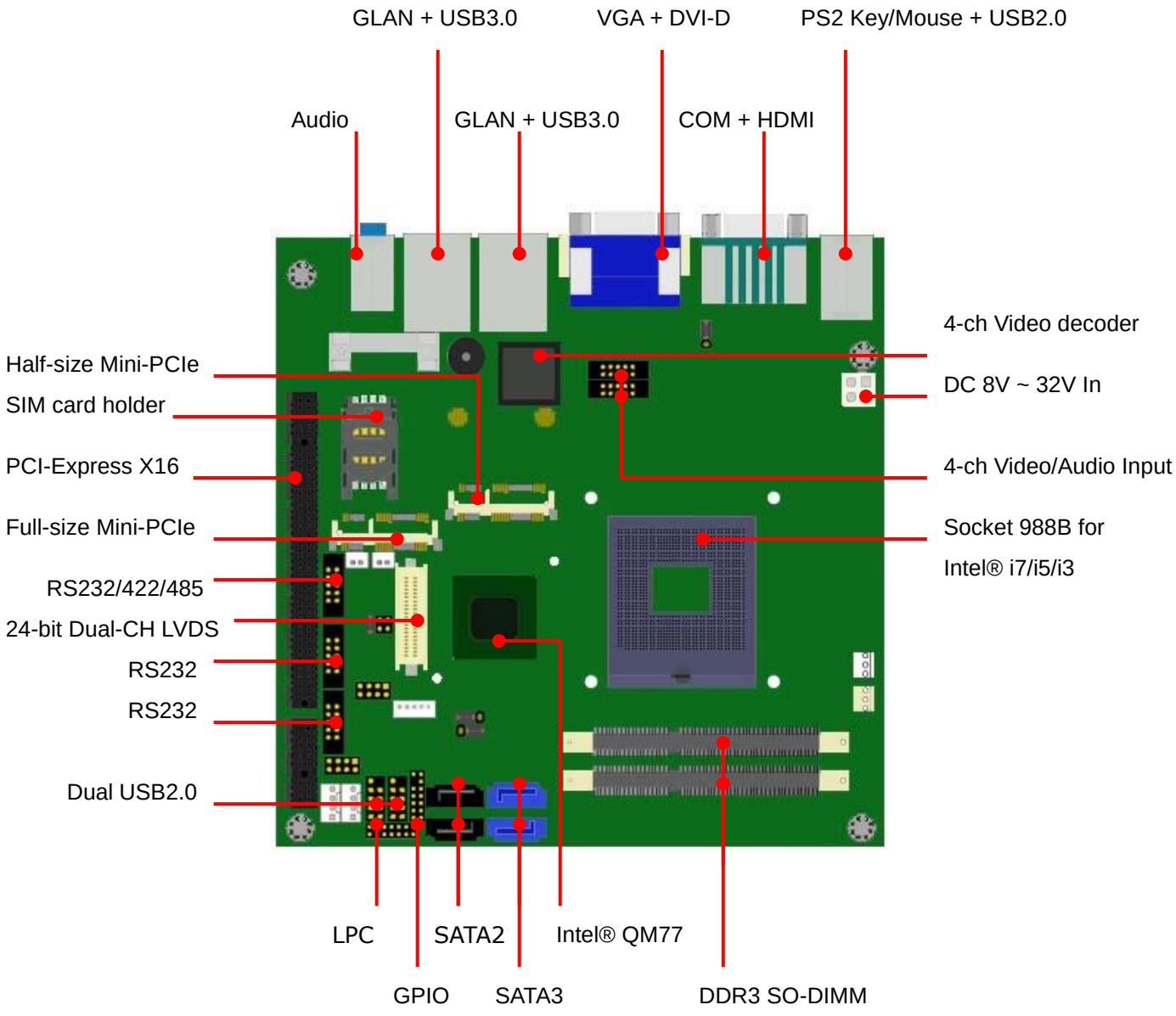
1.4 Board and System Layout Dimension

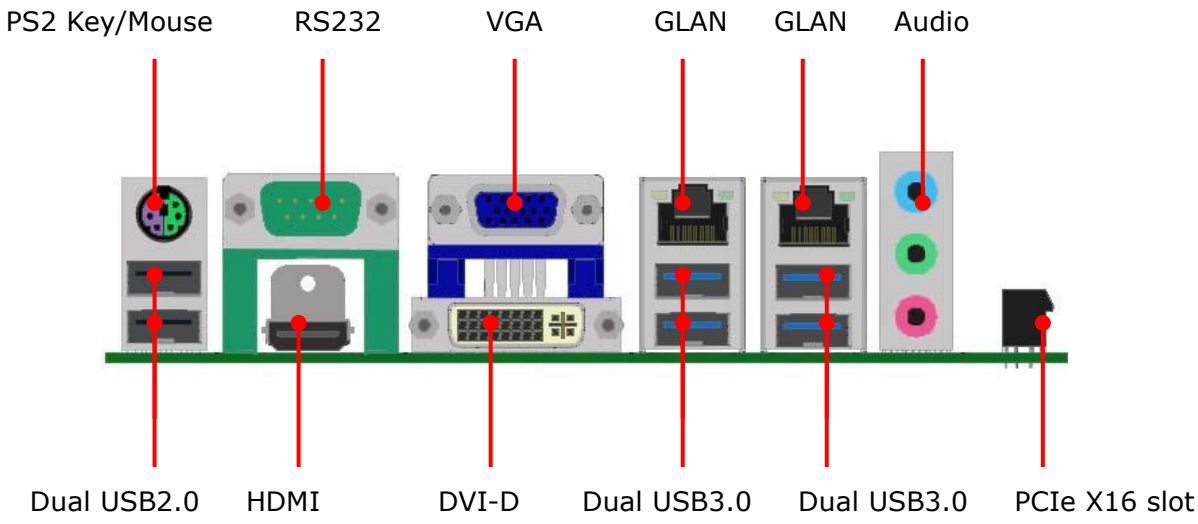



32,45
33,20
33,11
32,65
37,12

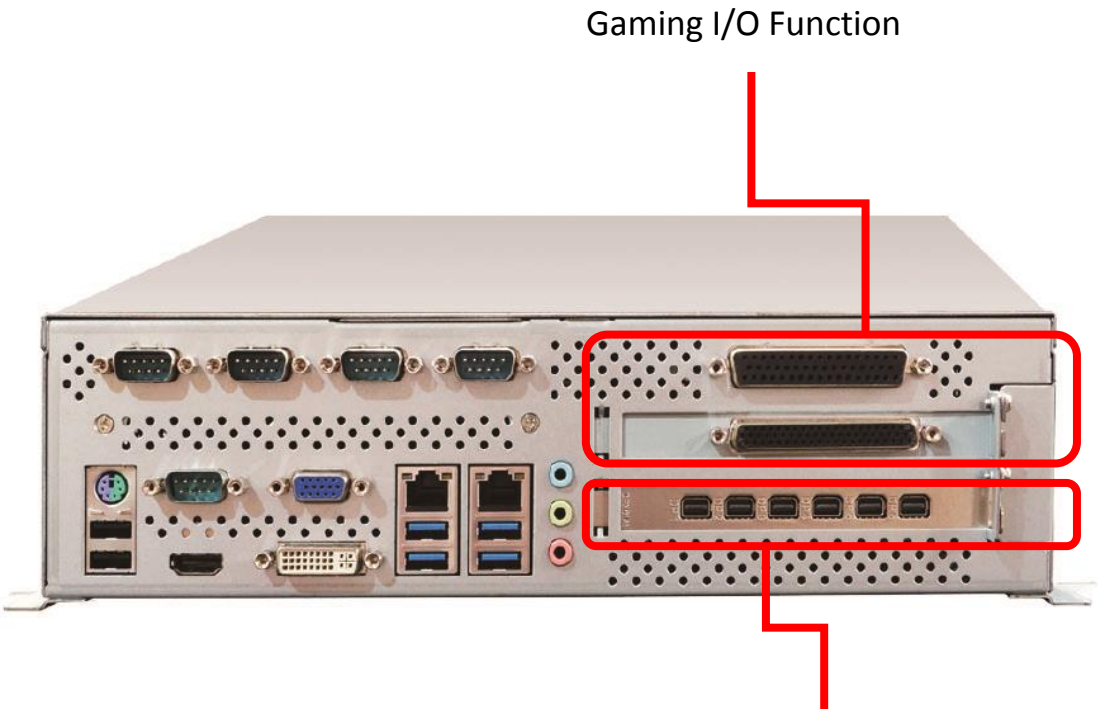

25
75
75
312
80
300
324
200
211
83.20

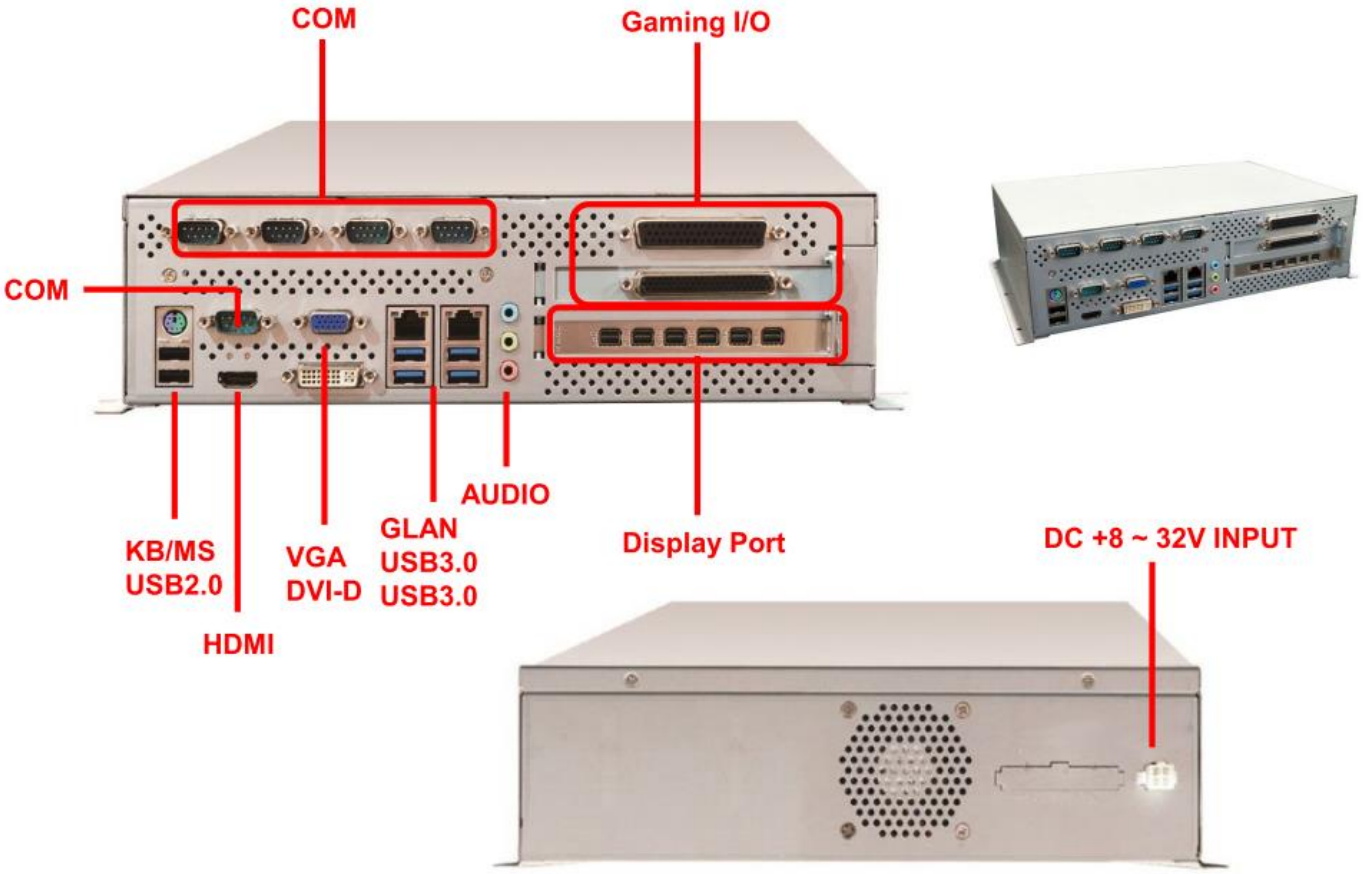
1.5 IO ports


GLAN + USB3.0
VGA + DVI-D
PS2 Key/Mouse + USB2.0
Audio
GLAN + USB3.0
COM + HDMI
4-ch Video decoder
Half-size Mini-PCIe
DC 8V ~ 32V In
SIM card holder
PCI-Express X16
4-ch Video/Audio Input
Full-size Mini-PCIe
Socket 988B for
Intel® i7/i5/i3
RS232/422/485
24-bit Dual-CH LVDS
RS232
RS232
Dual USB2.0
LPC
SATA2
Intel® QM77
GPIO
SATA3
DDR3 SO-DIMM


PS2 Key/Mouse
RS232
VGA
GLAN
GLAN
Audio
Dual USB2.0
HDMI
DVI-D
Dual USB3.0
Dual USB3.0
PCIe X16 slot

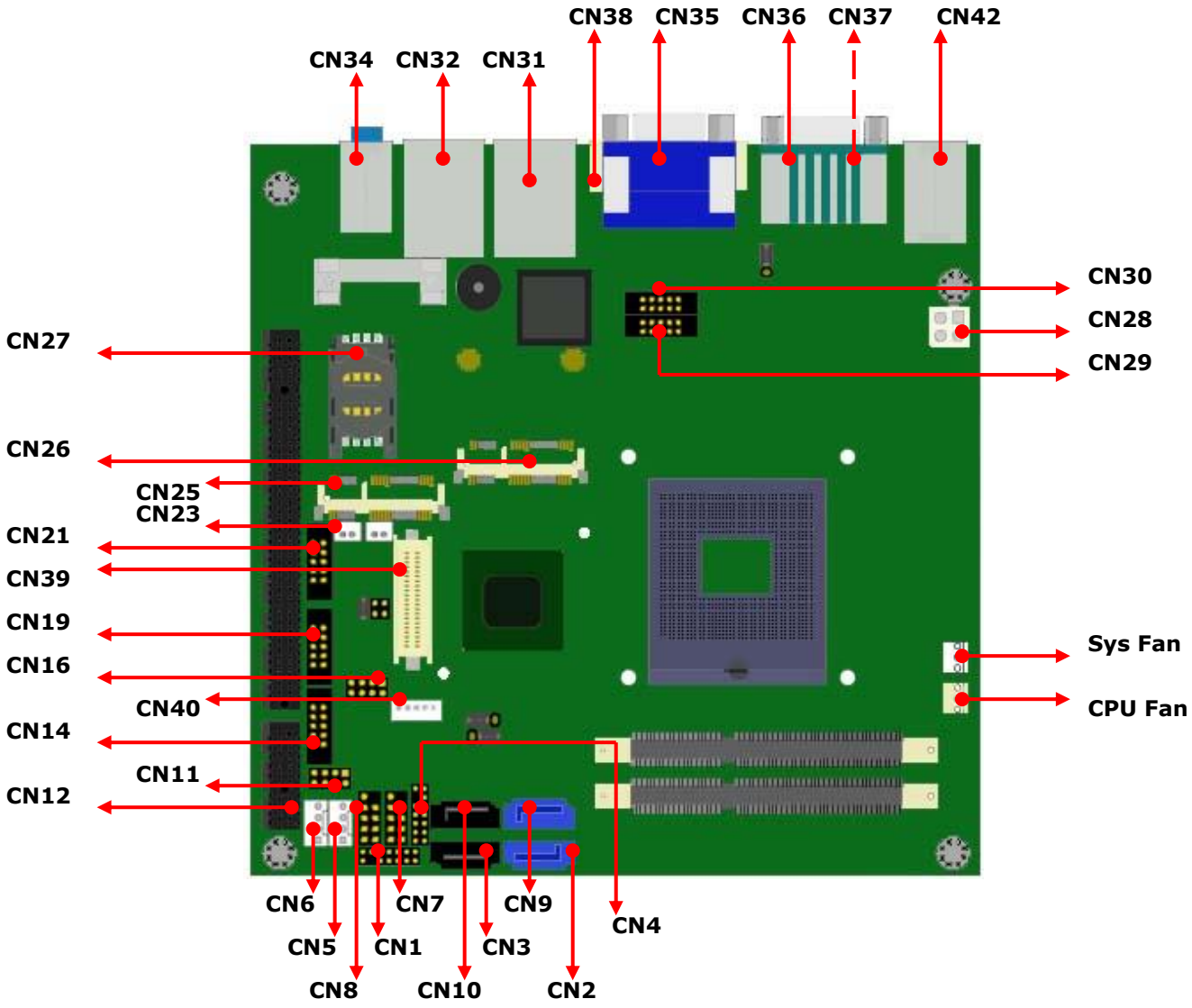
1.6 SYSTEM


Gaming I/O Function
Expansion slot for miscellanouse applications


COM
Gaming I/O
COM
KB/MS
USB2.0
HDMI
VGA
DVI-D
GLAN
USB3.0
USB3.0
AUDIO
Display Port
DC +8 ~ 32V INPUT

2. Hardware installation

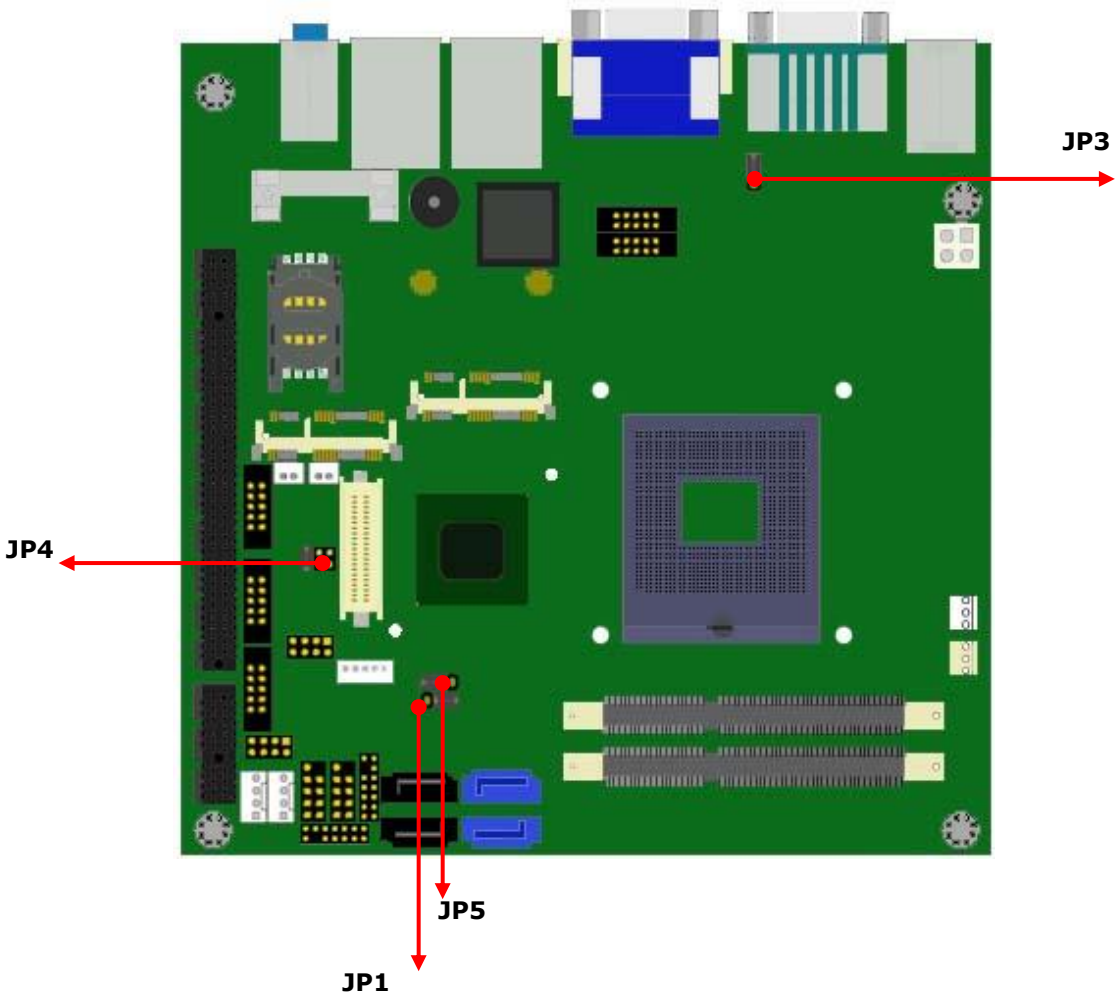
2.1 The location of onboard connectors



Label	Function
CN1	Low Pin Count
CN2	SATA3-1
CN3	SATA2-1
CN4	8-bit GPIO
CN5	SATA power-1
CN6	SATA power-2
CN7	USB 6/7
CN8	USB 8/9
CN9	SATA3-2
CN10	SATA2-2
CN11	SPI Programmer
CN12	PCI-Express X1 slot
CN13	N/C
CN14	COM4
CN15	N/C
CN16	Power on/off, Reset, HDD/Power LED
CN17	N/C
CN18	N/C
CN19	COM3
CN20	N/C
CN21	COM2

Label	Function
CN22	Half-size Mini-PCIe LED
CN23	Full-size Mini-PCIe LED
CN24	PCI-Express X16 slot
CN25	Full-size Mini-PCIe socket
CN26	Half-size Mini-PCIe socket
CN27	SIM card holder
CN28	P4 4-pin power input connector
CN29	4-ch Audio input
CN30	4-ch Video input
CN31	RJ45 LAN + Dual USB 3.0
CN32	RJ45 LAN + Dual USB 3.0
CN33	PS2 keyboard/mouse + Dual USB 2.0
CN34	Audio jack
CN35	VGA connector
CN36	COM1
CN37	HDMI connector
CN38	DVI-D connector
CN39	24-bit Dual Channel LVDS connector
CN40	LVDS Backlight inverter
CN41	N/C
CN42	N/C

2.2 The location of onboard jumpers



Label	Function
JP1	CMOS Clear jumper
JP2	N/C
JP3	AT/ATX power mode jumper select
JP4	Panel Voltage (VCC) select
JP5	LVDS backlight control mode select

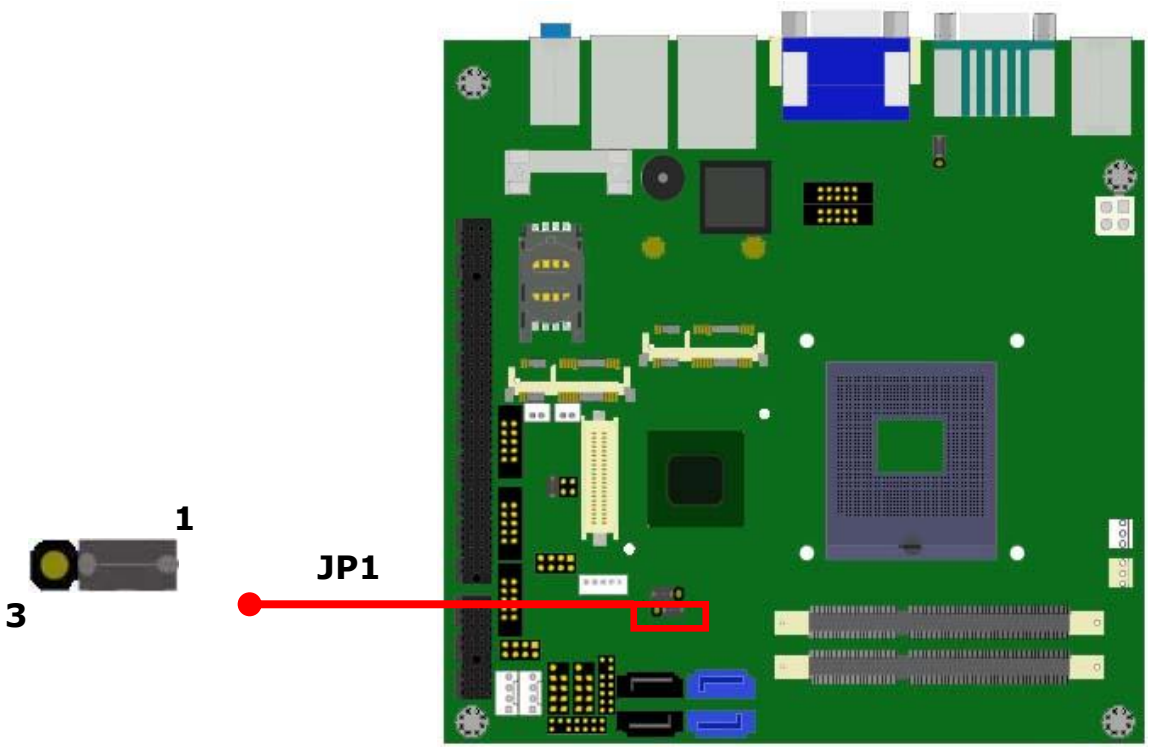
2.3 The function list of onboard jumpers setting

- 2.3.1 : JP1 for for Clear CMOS

  If you want to clean the CMOS data, set jumper to 2-3 just for few seconds, Then, Move the jumper back to 1-2 pin

JP1	
Closed Pin	Result
1-2 *	Normal
2-3	Clear CMOS

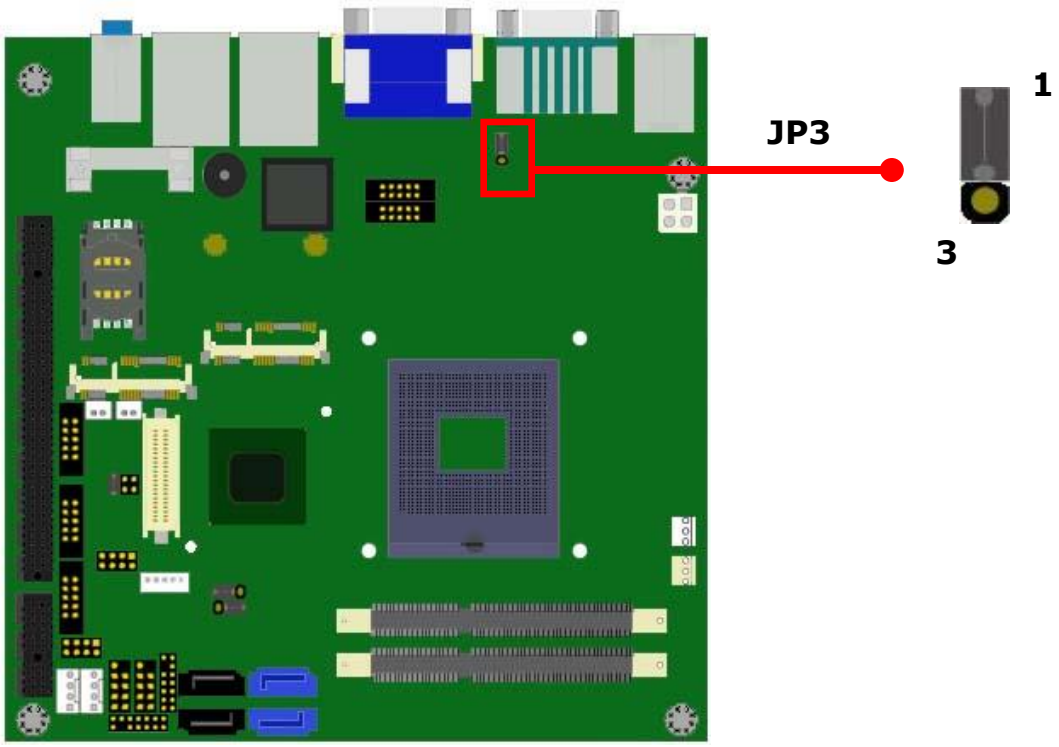
* Default setting



- 2.3.2: JP3 for ATX / AT mode

JP3	
Closed Pin	Result
1-2 *	ATX mode
2-3	AT mode

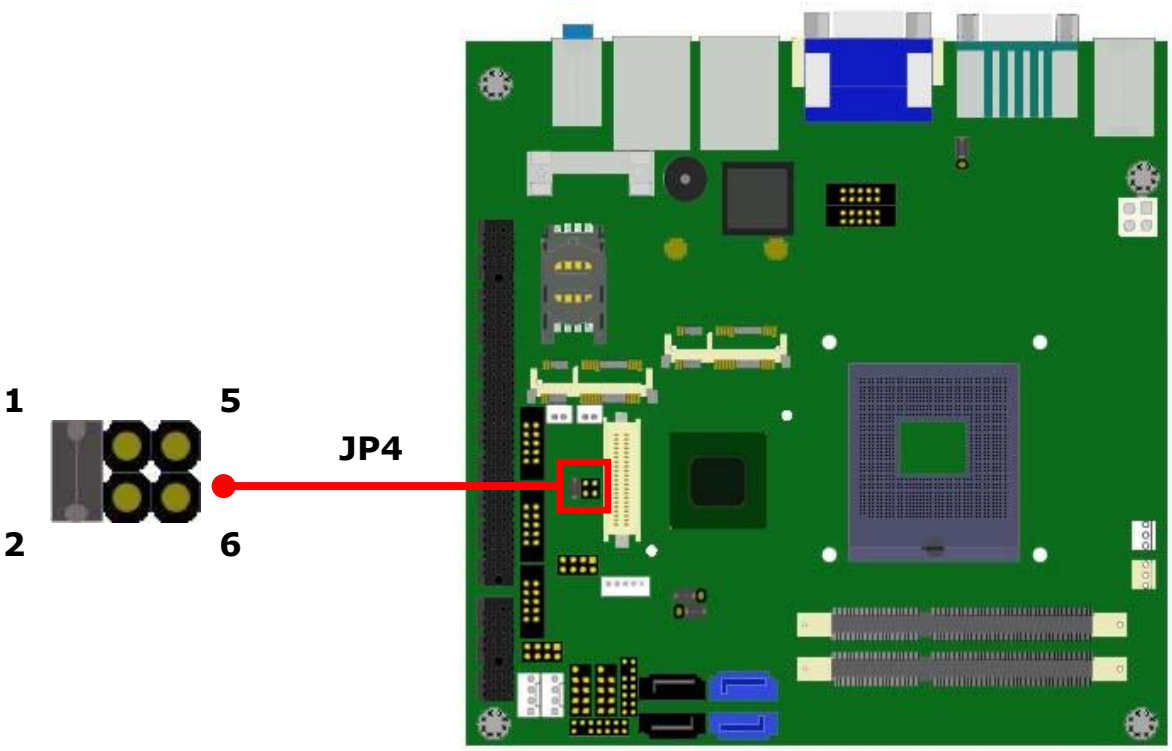
* Default setting



- 2.3.3 : JP4 for LVDS voltage select

JP4	
Closed Pin	Result
1-2 *	+3.3V
3-4	+5V
5-6	+12V

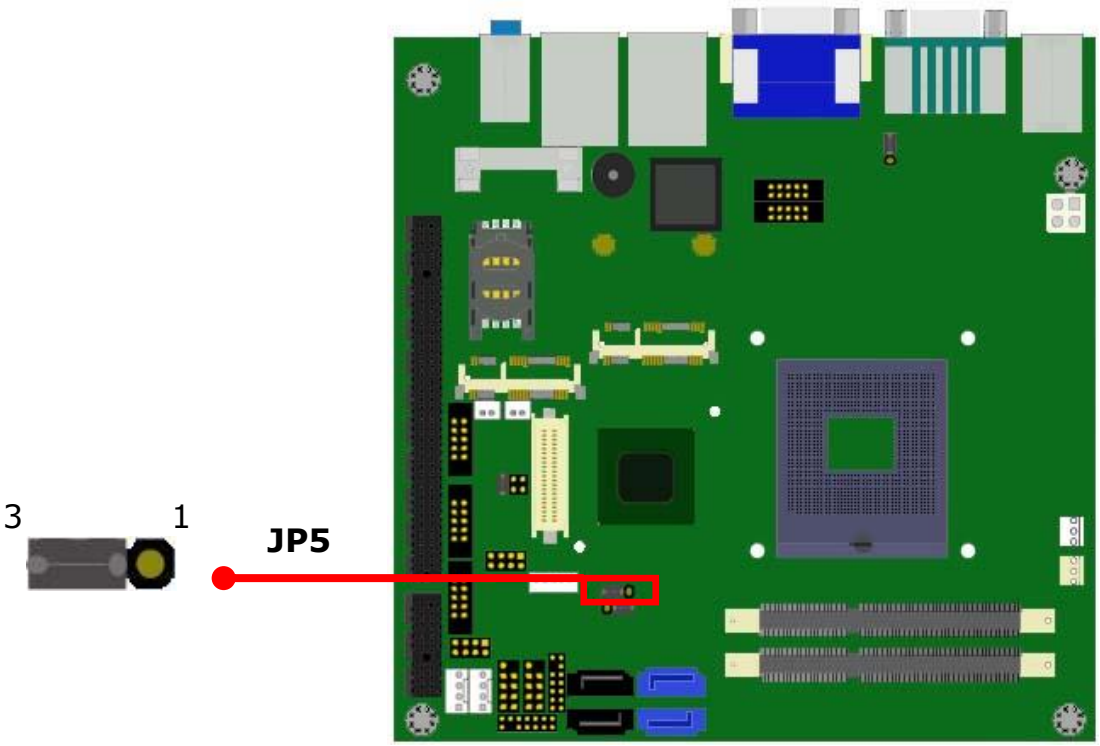
* Default setting



- 2.3.4 : JP5 for LVDS brightness control mode

JP5	
Closed Pin	Result
1-2	PWM mode
2-3 *	DC Level

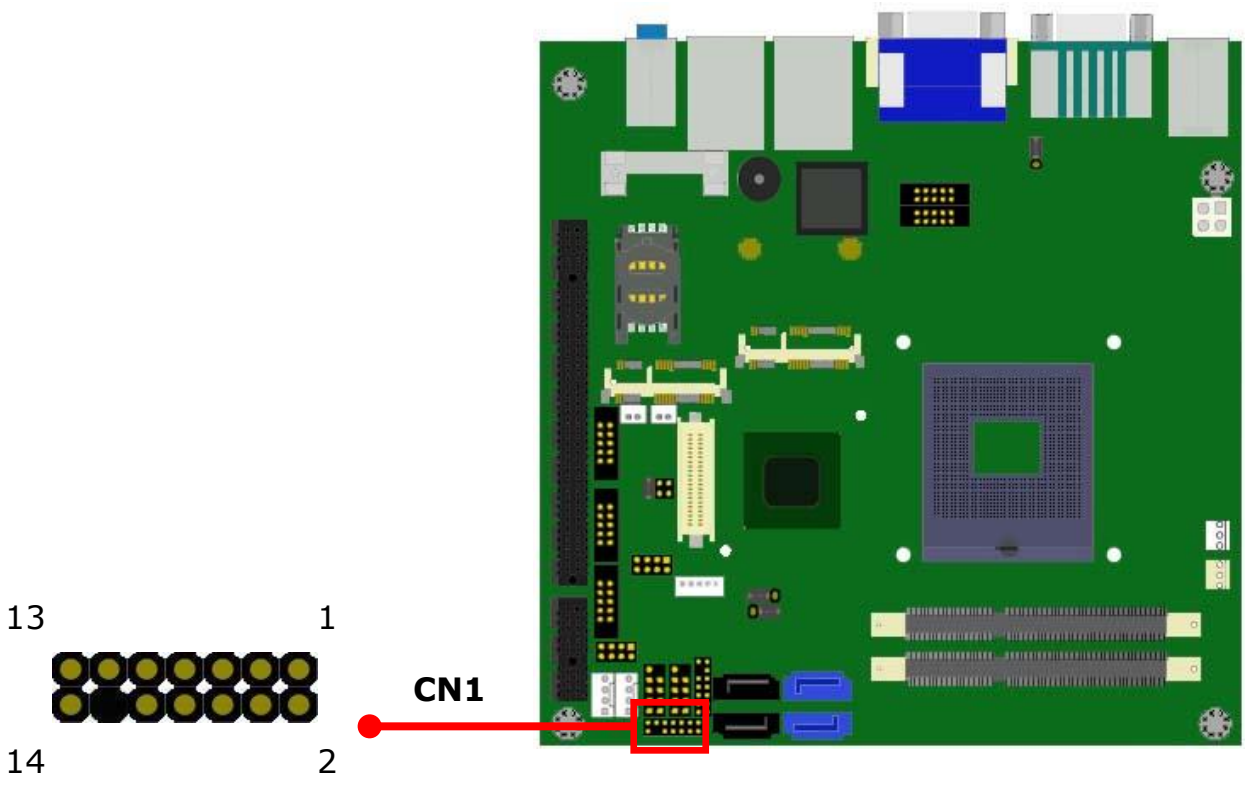
* Default setting



2.4 The pin define of onboard pin header

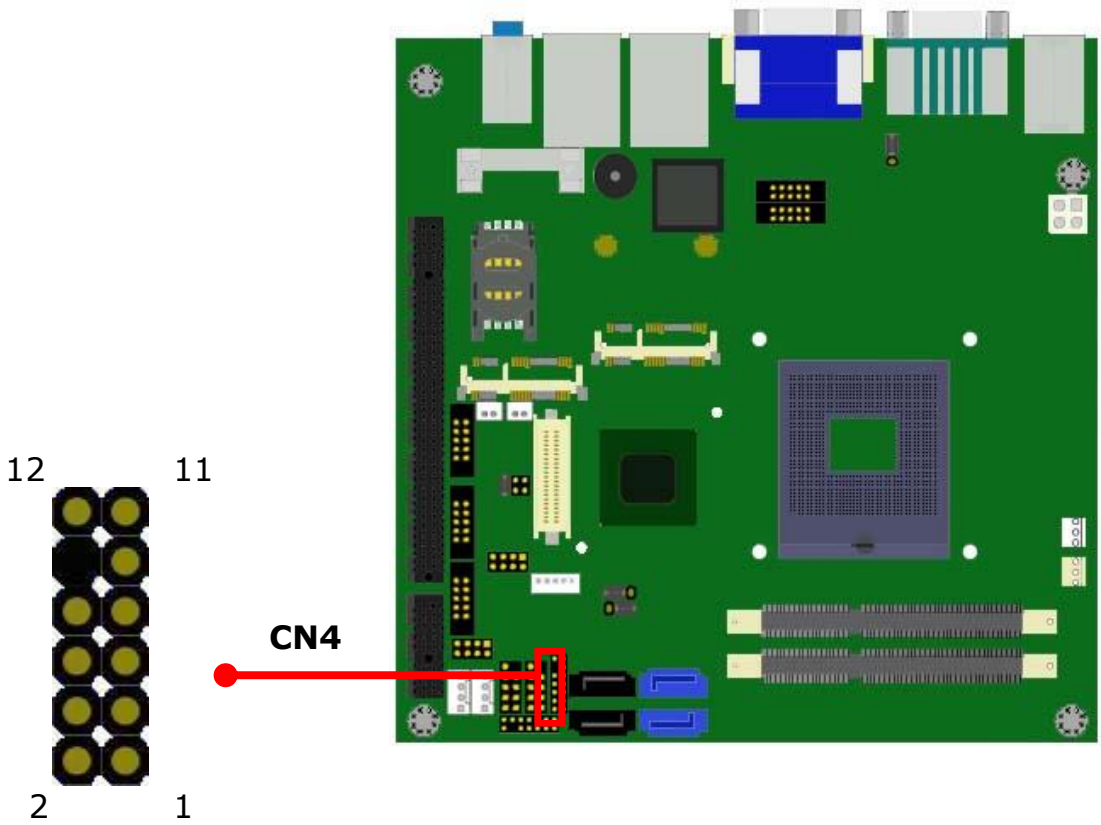
- 2.4.1 : CN1 for Low Pin Count pin-header

CN1 : 2 x 7 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD3	6	LFRAME
7	Reset	8	+5V
9	PORT80_PCLK	10	LPME
11	GND		Key
13	SERIRQ	14	LDRQ



2.4.2 : CN4 for 8-bit GPIO

CN4 : 2 x 6 header , pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	GPI0
3	GPI1	4	GPI2
5	GPI3	6	GPO0
7	GPO1	8	GPO2
9	GPO3	10	Key
11	+5V	12	GND



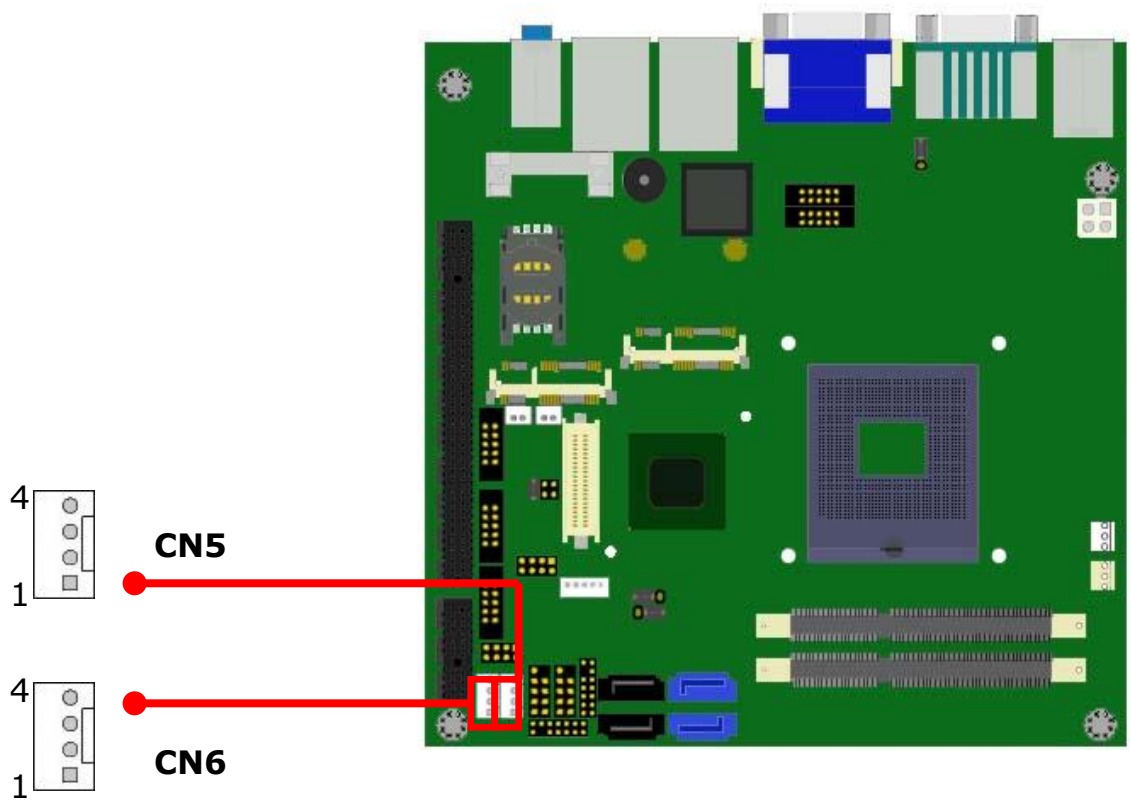
- 2.4.3 : CN5 & CN6 for 4-pin HDD power

CN5 : 4-pin wafer for SATA power connector			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	GND	4	+5V

Note: Maximum output current 12V/1A, 5V/1A

CN6 : 4-pin wafer for SATA power connector			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	GND	4	+5V

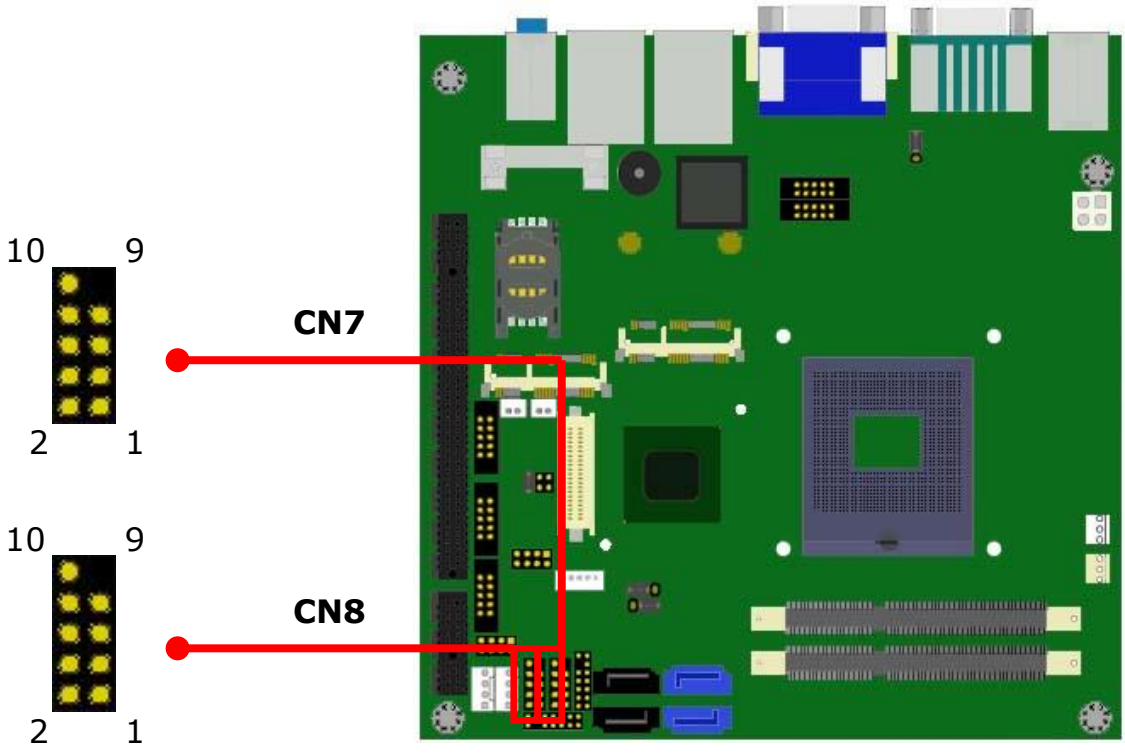
Note: Maximum output current 12V/1A, 5V/1A



- 2.4.4 : CN7 & CN8 for USB 6/7 , USB 8/9

CN7: 2 x 5 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB6_ data-	4	USB7_data-
5	USB6_ data+	6	USB7_data+
7	GND	8	GND
9	Key	10	GND

CN8: 2 x 5 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB8_ data-	4	USB9_data-
5	USB8_ data+	6	USB9_data+
7	GND	8	GND
9	Key	10	GND

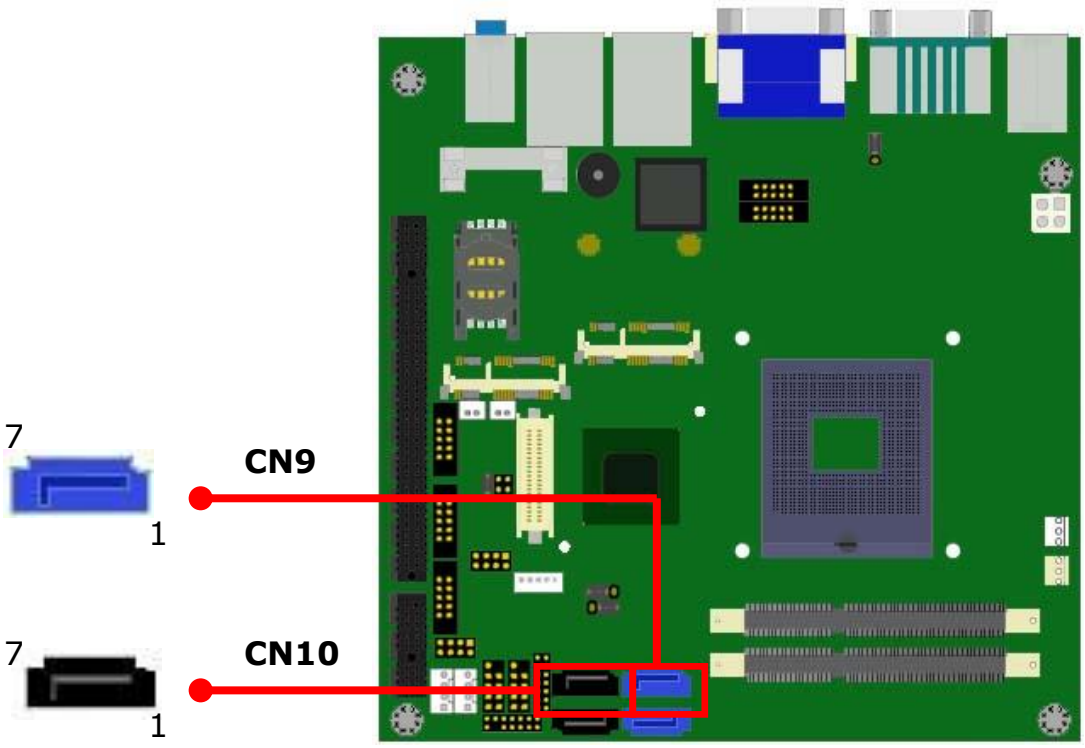


2.4.5 : CN9 for SATA 3.0 connector

CN9 : SATA 2.0 connector			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	GND		

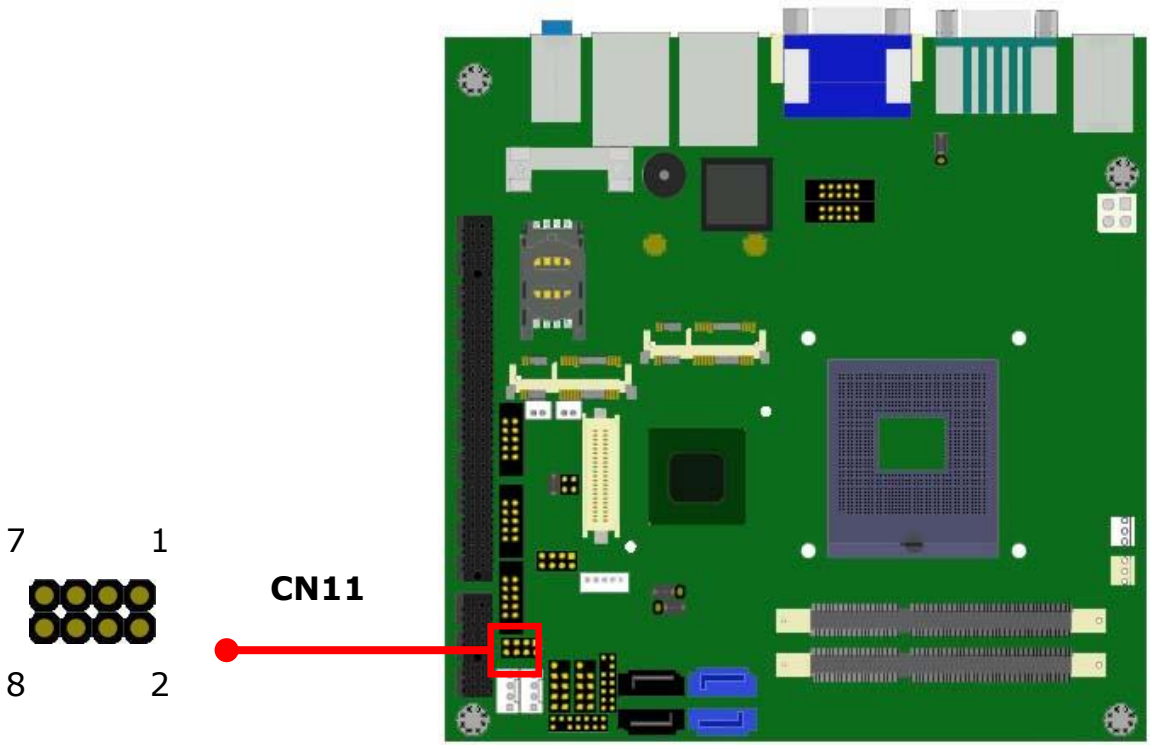
CN10 for SATA 2.0 connector

CN10 : SATA 2.0 connector			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	GND		



- 2.4.6 : CN11 for SPI programmer

CN11 : 2 x 4 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+3.3V	2	GND
3	CS_N (Chip Select)	4	SCLK (Serial Clock)
5	MISO (Master Input, Slave Output)	6	MOSI (Master Output, Slave Input)
7	N/C	8	FLASH_IO

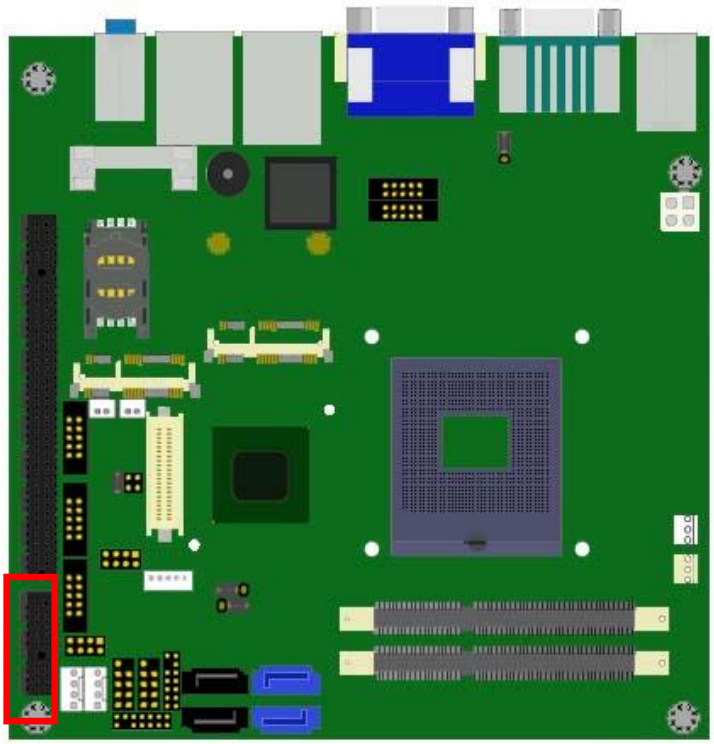


- 2.4.7 : CN12 for PCI-Express X1 slot

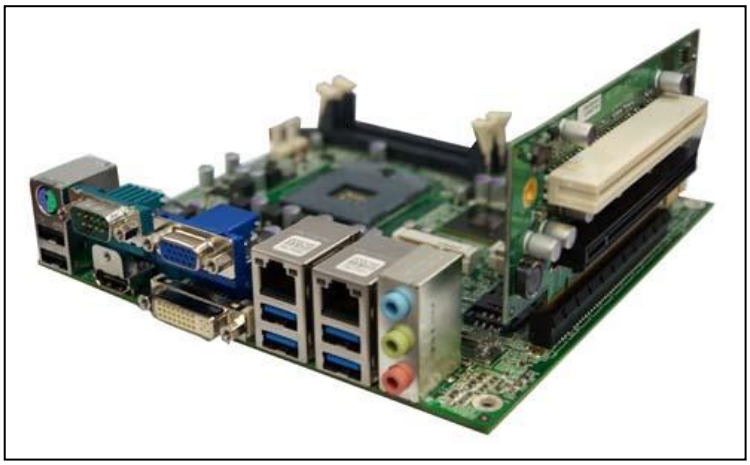
Note: This slot could work with AEWIN's RE-S01 r-ser card to get PCIe X16 & PCI expansion slots

Regarding the PCIe X16 slot, The Max. power that could support is 35W PCIe add-on card

Pin	Side B	Side A
1	+12V	PRSNT1
2	+12V	+12V
3	+12V	+12V
4	GND	GND
5	SMCLK	TCK
6	SMDAT	TDI
7	GND	TOD
8	+3.3V	TMS
9	RST	+3.3V
10	+3.3V AUX	+3.3V
11	WAKE	PWRGD
	Key Notch	
12	Reserved	GND
13	GND	REFCLK+
14	HSOp	REFCLK-
15	HSOn	GND
16	GND	HSIp
17	PRSNT2	HSIn
18	GND	GND

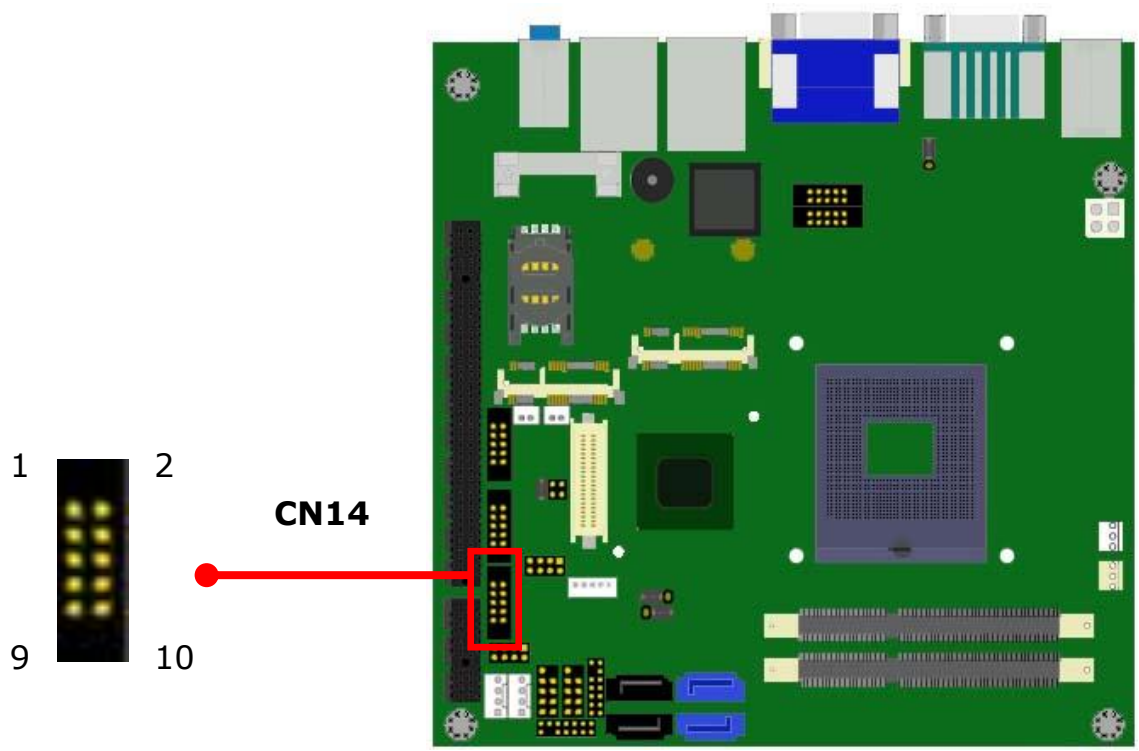


Configuration of MB-8300C with RE-S01 riser card



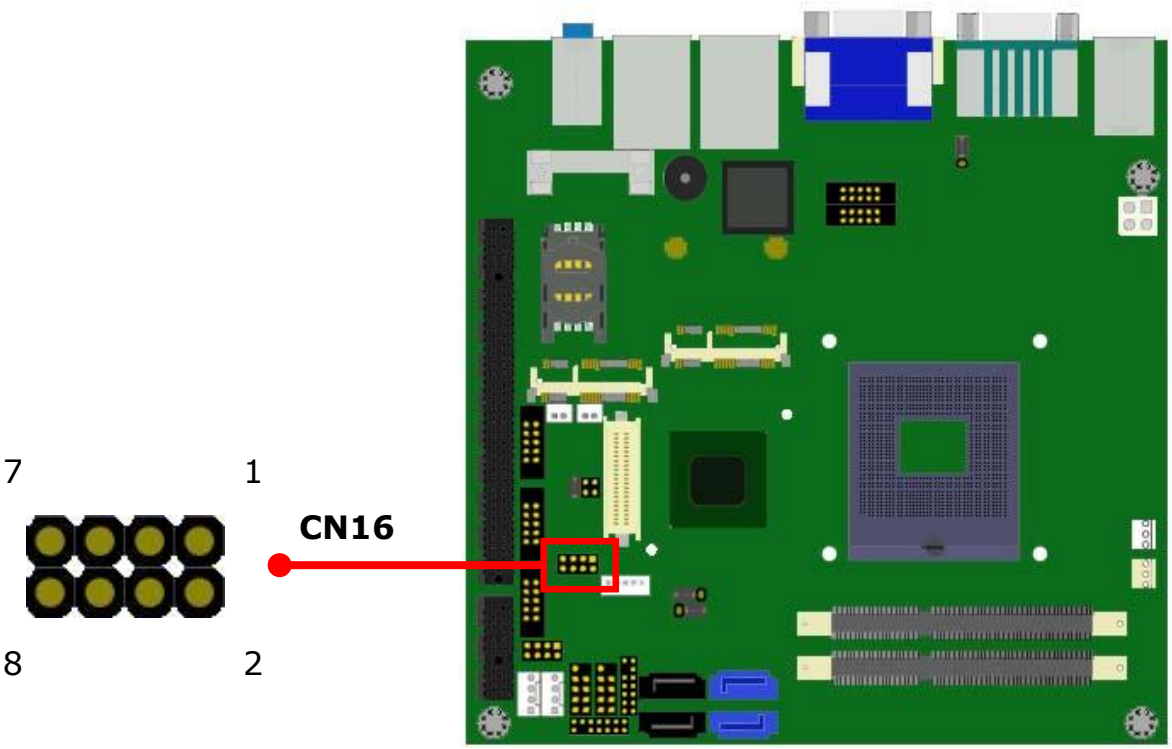
- 2.4.8 : CN14 for COM4 , RS232

CN14 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive Data	4	RTS, Request to send
5	TXD, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



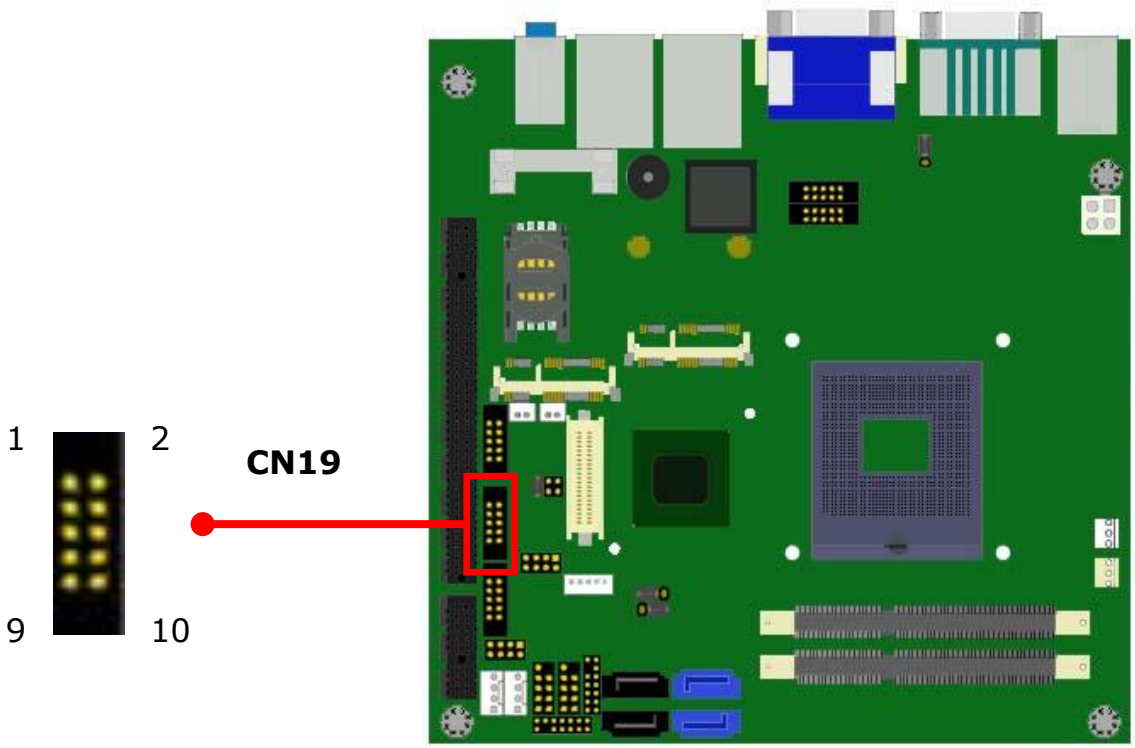
- 2.4.9 : CN16 for front Panel pin header

CN16 : 2 x 4 header , pitch 2.54 mm			
Pin	**Signal**	**Pin**	**Signal**
1	HDD_LED+	2	Power_LED+
3	HDD_LED-	4	GND
5	GND	6	GND
7	RESET+	8	Power_Switch



- 2.4.10 : CN19 for COM3 , RS232

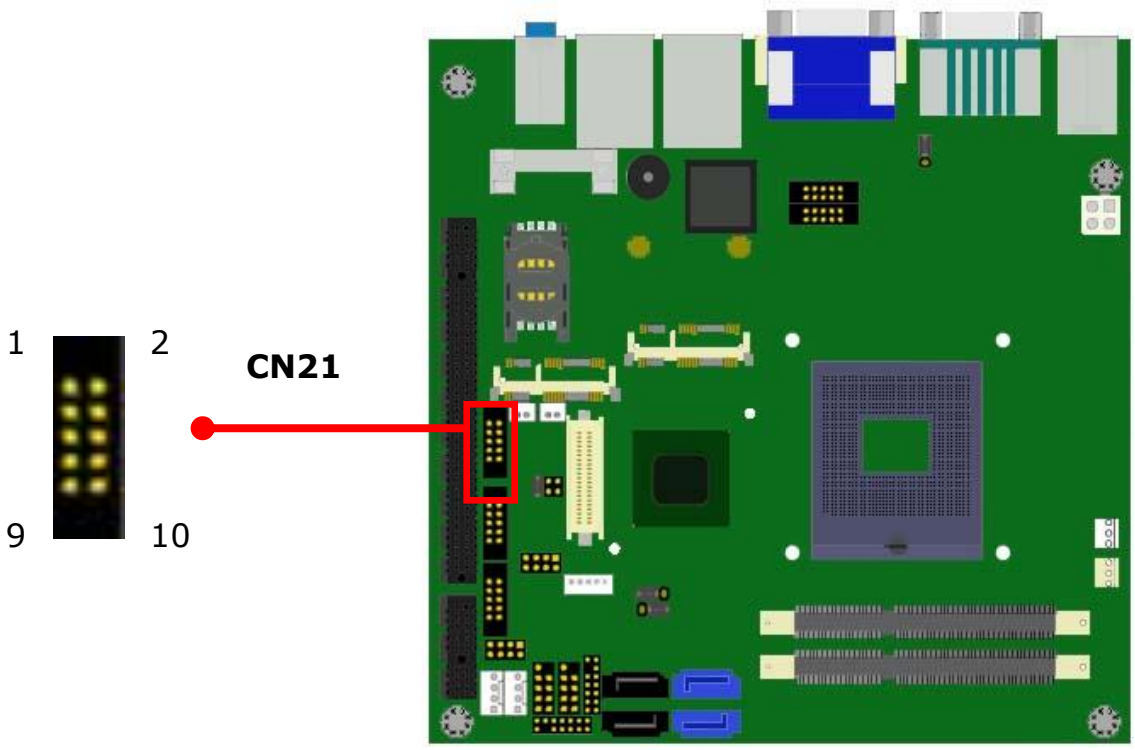
CN19 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	DCD, Data carrier detect	2	DSR, Data set ready
3	RXD, Receive Data	4	RTS, Request to send
5	TXD, Send Data	6	CTS, Clear to se
7	DTR, Data Terminal Ready	8	RI, Ring indicator
9	GND	10	N/C



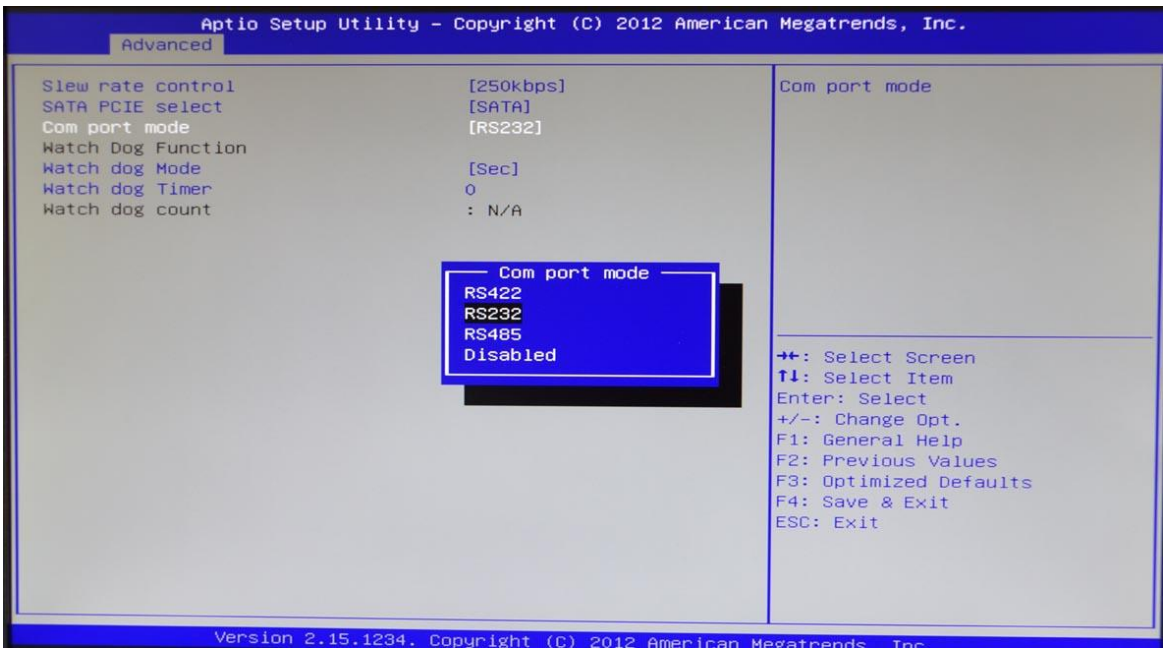
- 2.4.11 : CN21 for COM2 , RS232/422/485

Note: COM2 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

CN21 : 2 x 5 header , Pitch 2.00 mm			
Pin	**RS232 mode**	**RS422 mode**	**RS485 mode**
1	DCD, Data carrier detect	TXD-	TXD-
2	DSR, Data set ready		
3	RXD, Received Data	TXD+	TXD+
4	RTS, Request to send		
5	TXD, Transmitted Data	RXD+	
6	CTS, Clear to sent		
7	DTR, Data terminal ready	RXD-	
8	RI, Ring indicator		
9	GND		
10	N/C		



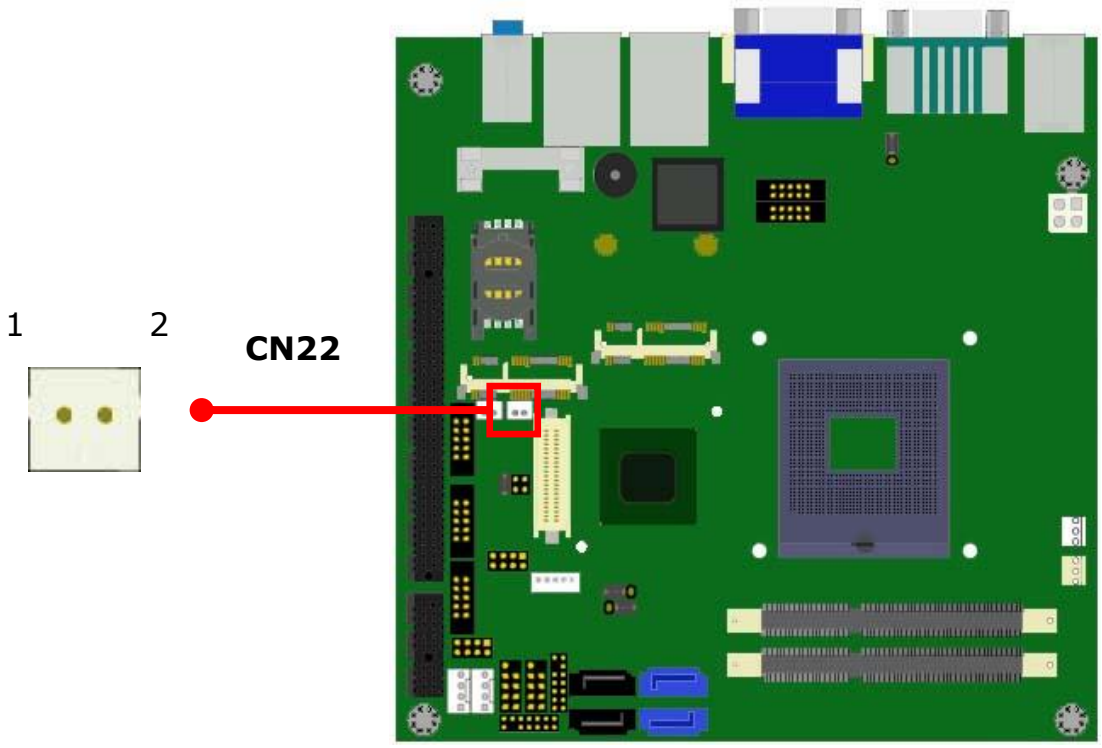
BIOS setting manual :



- 2.4.12 : CN22 for Half-size Mini-PCIe WLAN LED indictor

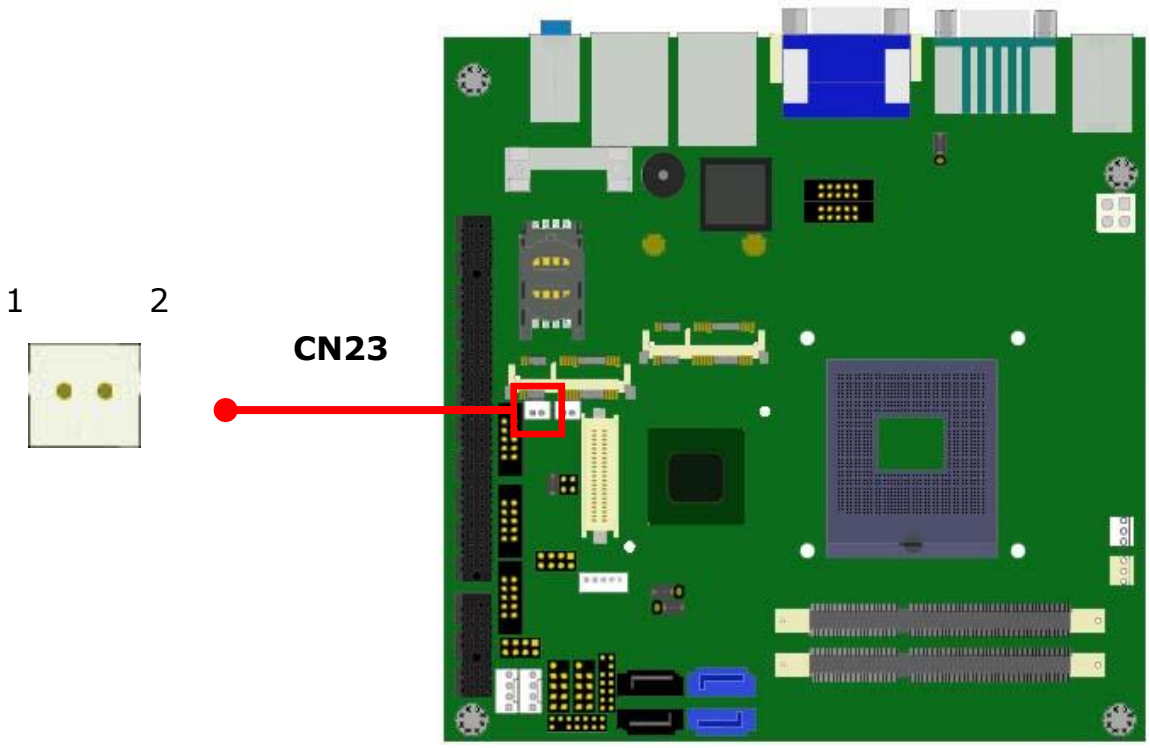
CN22 : 1 x 2 , 2-pin wafer			
Pin	**Signal**	**Pin**	**Signal**
1	LED_WLAN	2	+3.3V

Note: Half-size Mini-PCIe card could support SATA or PCIe signal. The default setting is SATA signal. Hardware modification required if want to change signal from SATA to PCIe.



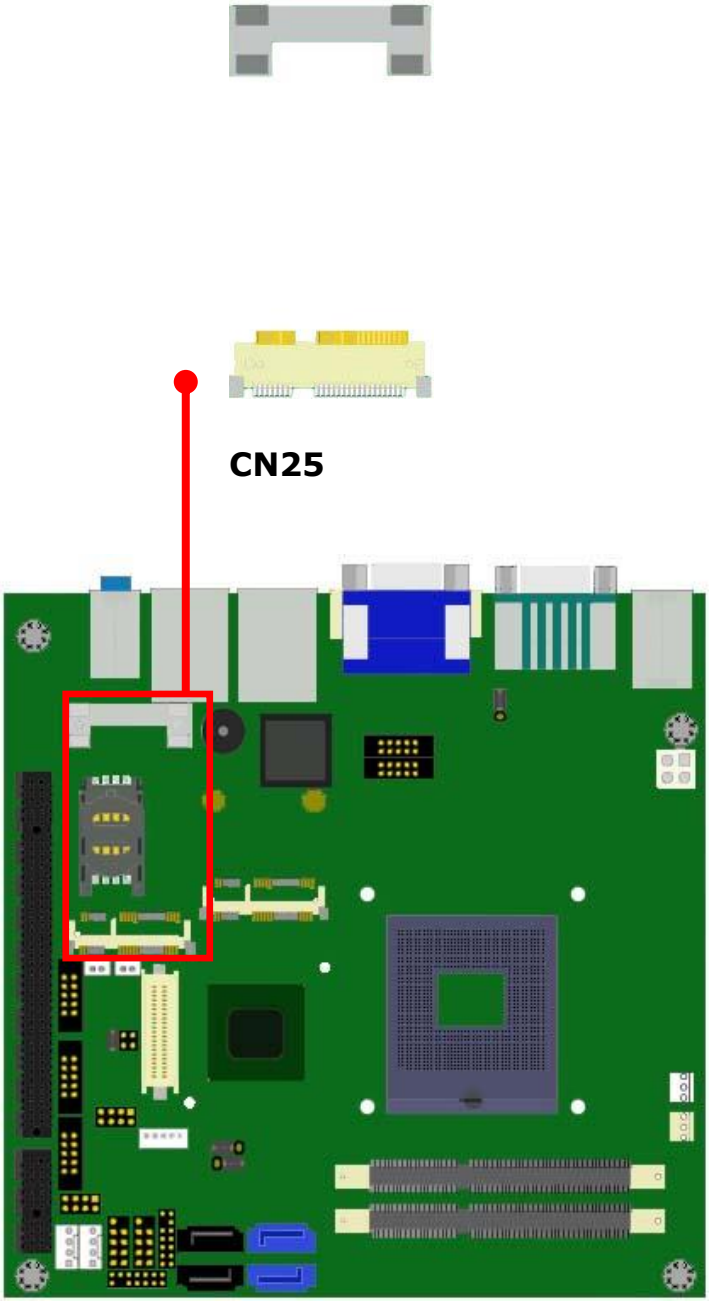
- 2.4.13 : CN23 for Full-size Mini-PCIe WLAN LED indictor

CN23 : 1 x 2 , 2-pin wafer			
Pin	**Signal**	**Pin**	**Signal**
1	LED_WLAN	2	+3.3V



- 2.4.14 : CN25 for Full-size Mini-PCIe socket

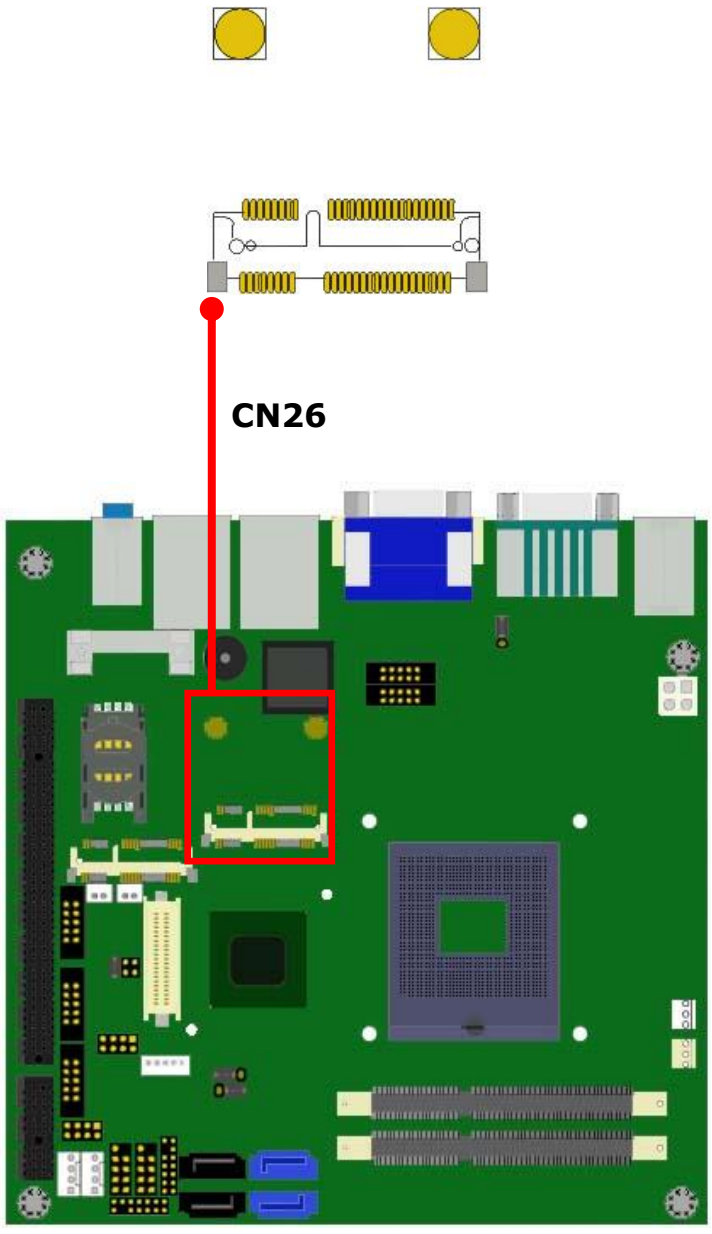
Pin	Signal	Pin	Signal
1	WAKE	27	GND
2	+3.3V AUX	28	+1.5V
3	N/C	29	GND
4	GND	30	SMBCLK
5	N/C	31	PETN0
6	+1.5V	32	SMBDATA
7	CLKREQ	33	PETP0
8	UIM_PWR	34	GND
9	GND	35	GND
10	UIM_DATA	36	USB_D-
11	REFCLK-	37	GND
12	UIM_CLK	38	USB_D+
13	REFCLK+	39	+3.3V AUX
14	UIM_RESET	40	GND
15	GND	41	+3.3V AUX
16	UIM_VPP	42	LED_WWAN
17	UIM_C8	43	GND
18	GND	44	LED_WLAN
19	UIM_C4	45	N/C
20	W_Disable	46	N/C
21	GND	47	N/C
22	PERST	48	+1.5V
23	PERN0	49	N/C
24	+3.3V AUX	50	GND
25	PERP0	51	N/C
26	GND	52	+3.3V AUX



- 2.4.15 : CN26 for Half-size Mini-PCIe socket.

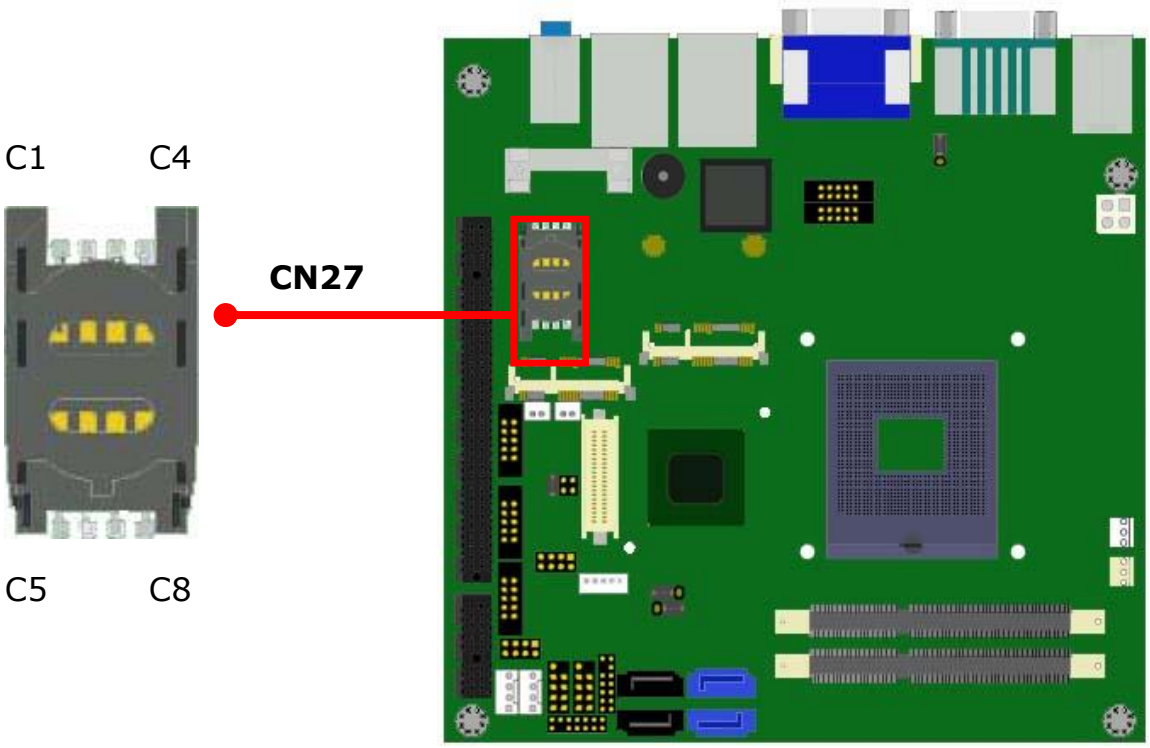
Note: Half-size Mini-PCIe card could support SATA or PCIe signal. The default setting is SATA signal. Hardware modifications required if want to change signal from SATA to PCIe.

Pin	Signal	Pin	Signal
1	WAKE	27	GND
2	+3.3V AUX	28	+1.5V
3	Reserved	29	GND
4	GND	30	SMBCLK
5	Reserved	31	PETN0
6	+1.5V	32	SMBDATA
7	CLKREQ	33	PETP0
8	Reserved	34	GND
9	GND	35	GND
10	UIM_DATA	36	USB_D-
11	REFCLK-	37	Reserved
12	Reserved	38	USB_D+
13	REFCLK+	39	Reserved
14	Reserved	40	GND
15	GND	41	Reserved
16	Reserved	42	LED_WWAN
17	Reserved	43	Reserved
18	GND	44	LED_WLAN
19	Reserved	45	Reserved
20	Reserved	46	N/C
21	GND	47	Reserved
22	PERST	48	+1.5V
23	PERN0	49	Reserved
24	+3.3V AUX	50	GND
25	PERP0	51	Reserved
26	GND	52	+3.3V



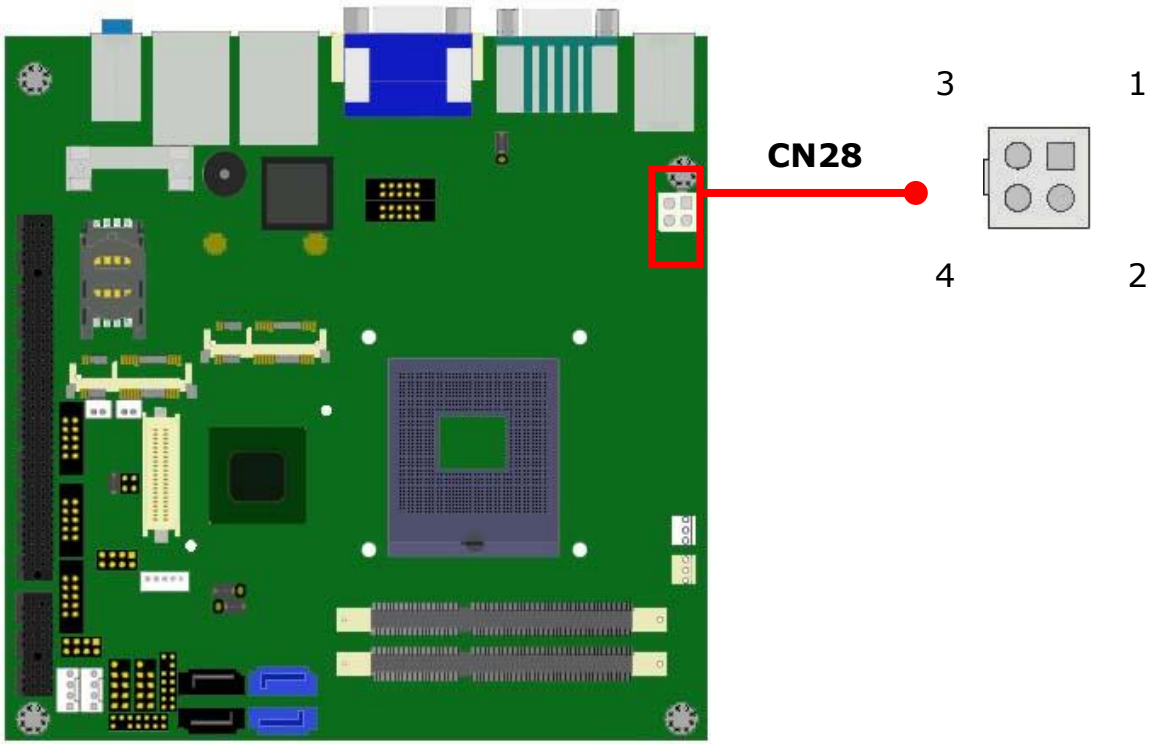
- 2.4.16 : CN27 for SIM holder

CN27 : SIM card holder			
Pin	**Signal**	**Pin**	**Signal**
C1	VCC	C2	RESET
C3	CLOCK	C4	Reserved
C5	GND	C6	VPP
C7	I/O	C8	Reserved



- 2.4.17 : CN28 for internal 4-pin power input

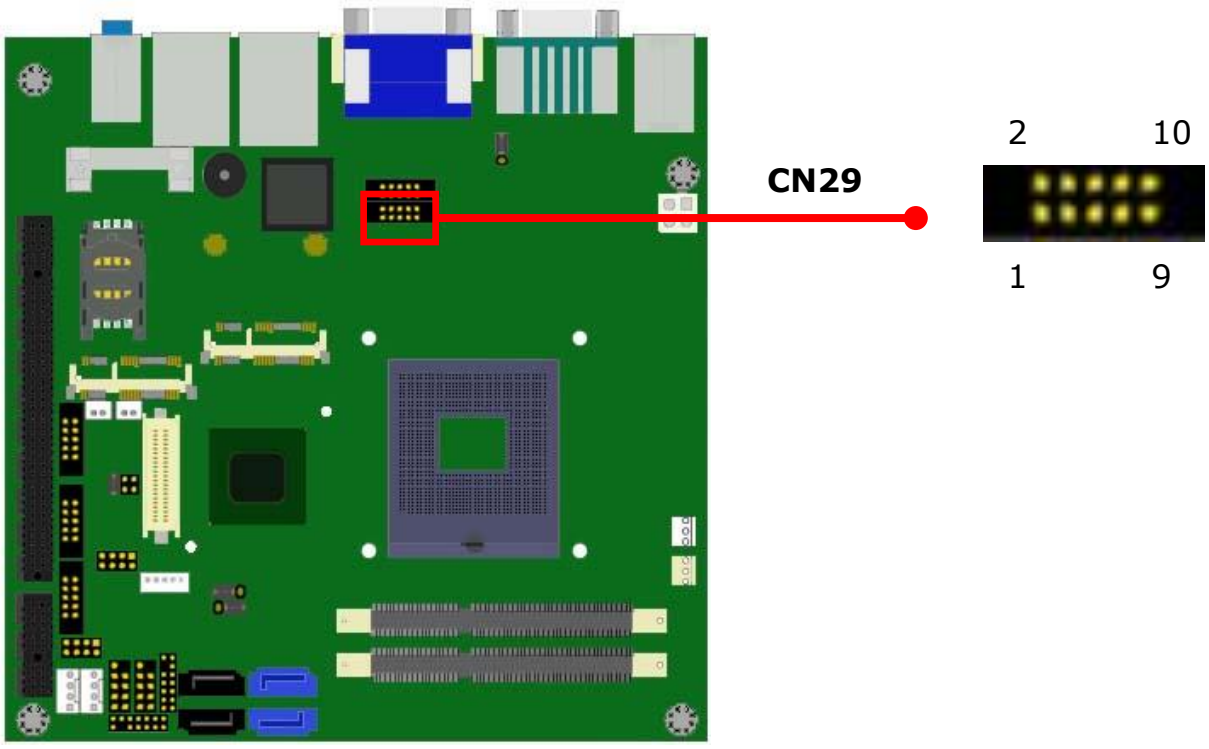
CN19 : ATX 2 x 2			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	GND
3	8V ~ 32V DC input	4	8V ~ 32V DC input



- 2.4.18 : CN29 for 4-ch Audio input

Note: This function for MB-8300B model only

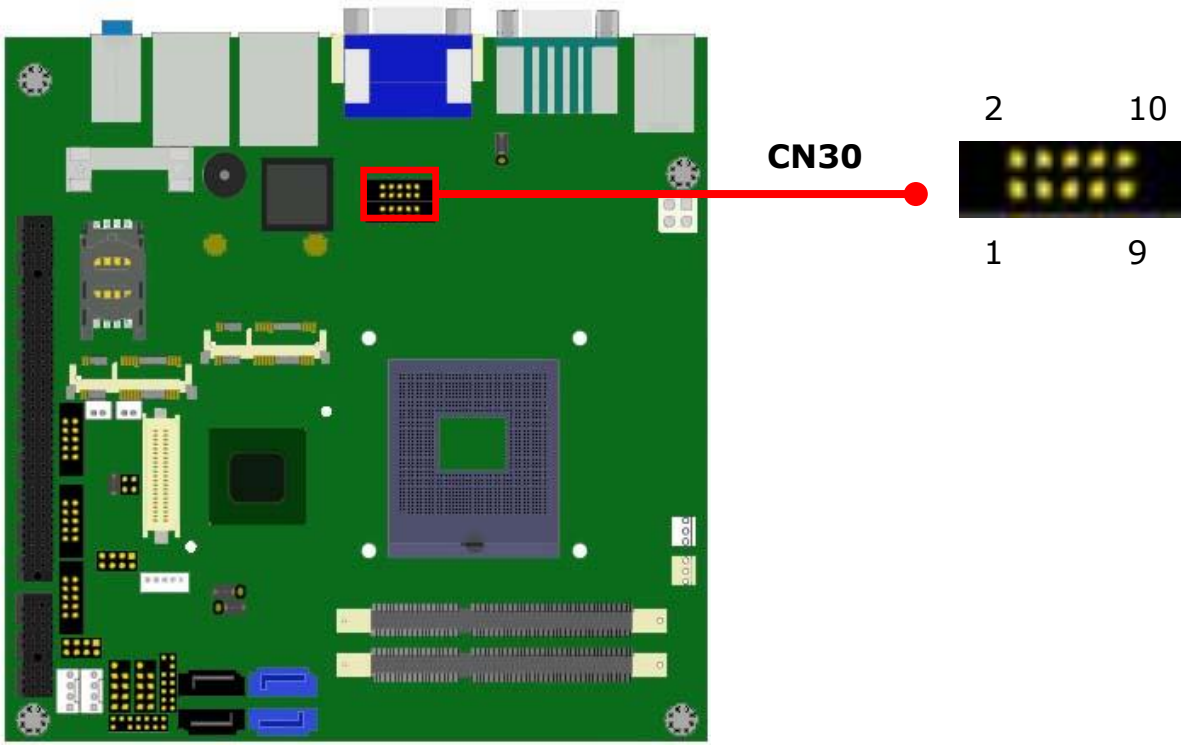
CN29 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	Audio_IN_1
3	GND	4	Audio_IN_2
5	GND	6	Audio_IN_3
7	GND	8	Audio_IN_4
9	GND	10	N/C



- 2.4.19 : CN30 for 4-ch Video input

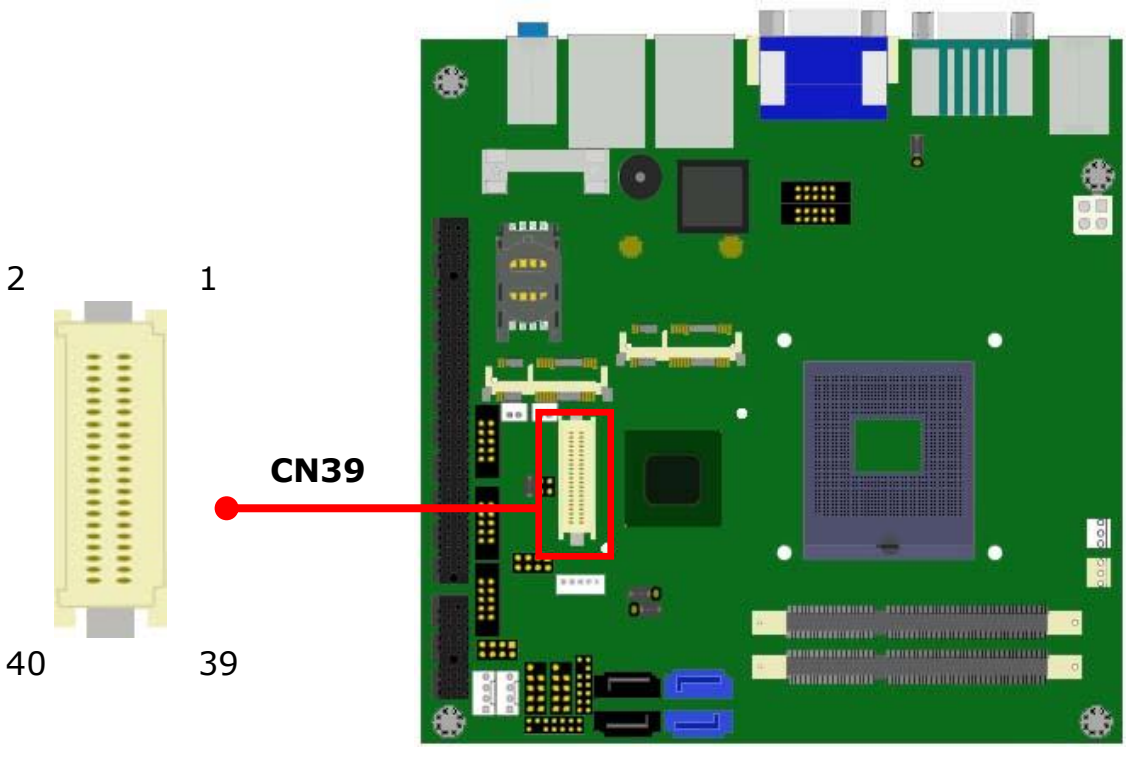
Note: This function for MB-8300B model only

CN29 : 2 x 5 header, pitch 2.00 mm			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	Video_IN_1
3	GND	4	Video_IN_2
5	GND	6	Video_IN_3
7	GND	8	Video_IN_4
9	GND	10	N/C

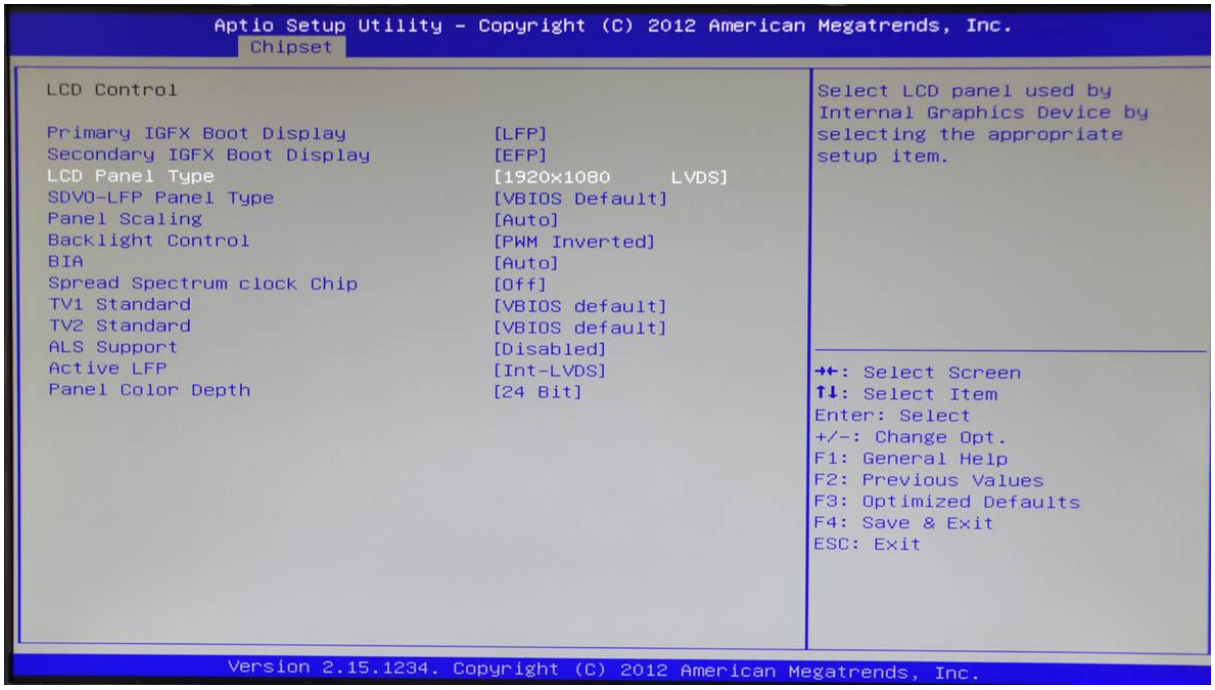


- 2.4.20 : CN39 for 24-bit Dual Channel LVDS

CN39 : connector type : DF13A-40DP-1.25V					
Pin	**Signal**	**Pin**	**Signal**	**Pin**	**Signal**
1	LVDS_VCC	15	LVDSA_1+	29	GND
2	LVDS_VCC	16	LVDSB_1+	30	GND
3	LVDS_VCC	17	GND	31	DDC_Clock
4	LVDS_VCC	18	GND	32	DDC_Data
5	GND	19	LVDSA_2-	33	GND
6	GND	20	LVDSB_2-	34	GND
7	LVDSA_0-	21	LVDSA_2+	35	LVDSA_3-
8	LVDSB_0-	22	LVDSB_2+	36	LVDSB_3-
9	LVDSA_0+	23	GND	37	LVDSA_3+
10	LVDSB_0+	24	GND	38	LVDSB_3+
11	GND	25	LVDSA_Clock-	39	SMB_Clock
12	GND	26	LVDSB_Clock-	40	SMB_Data
13	LVDSA_1-	27	LVDSA_Clock+		
14	LVDSB_1-	28	LVDSB_Clock+		

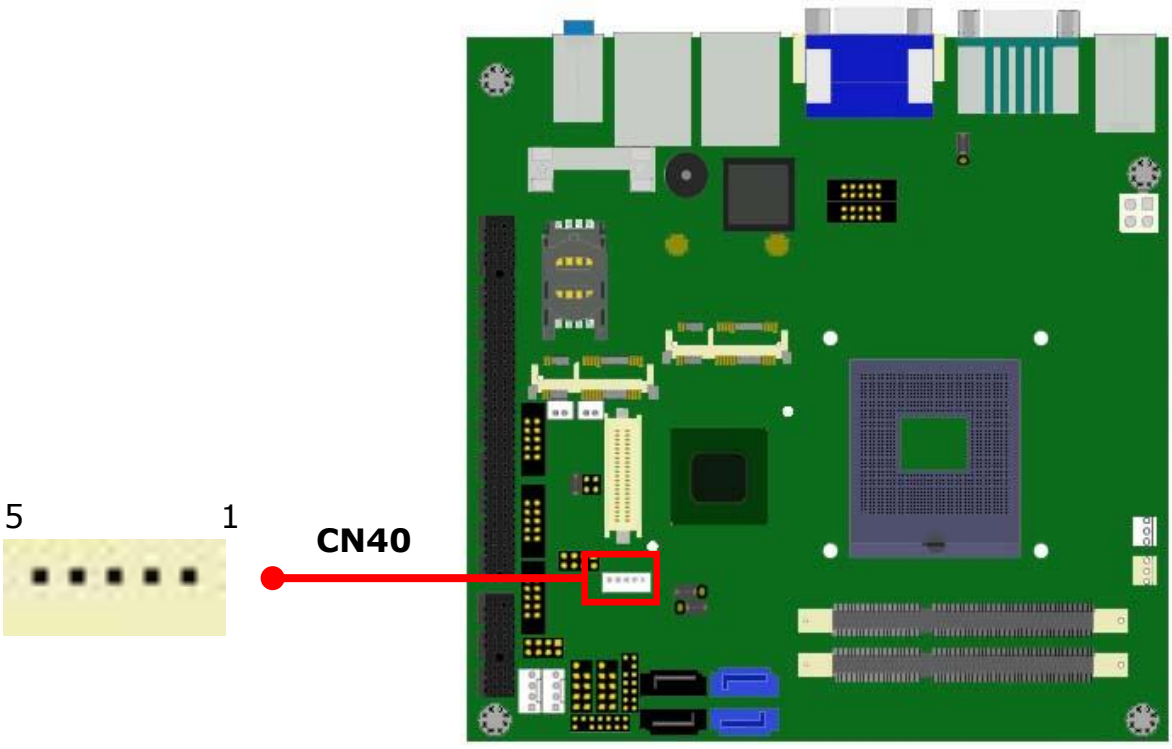


BIOS setting for LVDS Resolution:


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Chipset
LCD Control
Primary IGFX Boot Display [LFP]
Secondary IGFX Boot Display [EFP]
LCD Panel Type [1920x1080 LVDS]
SDVO-LFP Panel Type [VBIOS Default]
Panel Scaling [Auto]
Backlight Control [PWM Inverted]
BIA [Auto]
Spread Spectrum clock Chip [Off]
TV1 Standard [VBIOS default]
TV2 Standard [VBIOS default]
ALS Support [Disabled]
Active LFP [Int-LVDS]
Panel Color Depth [24 Bit]
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.

- 2.4.21 : CN40 for LVDS backlight

CN3: 1 x 5 wafer , Pitch : Pitch 2.0 mm			
Pin	**Signal**	**Pin**	**Signal**
1	+12V	2	GND
3	Backlight Enable	4	Backlight Control
5	+5V		

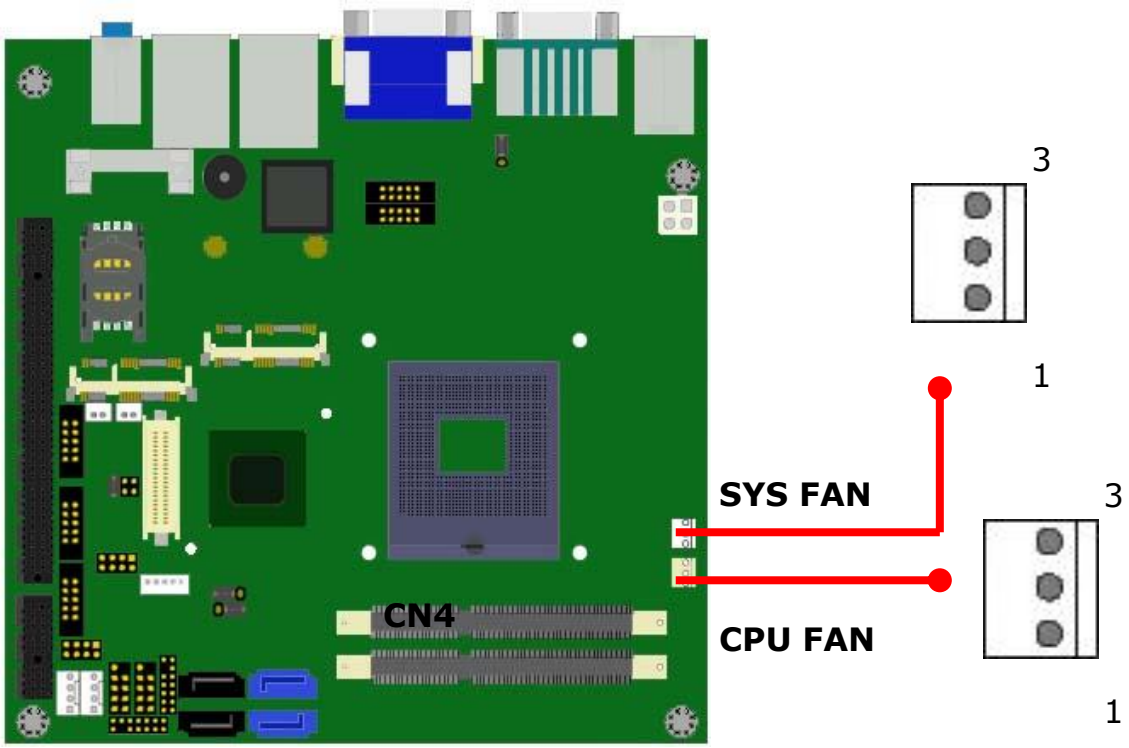


- 2.4.22 : SYS FAN for system Fan connector

CN4 : 1 x 3 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	+12V
3	Sense		

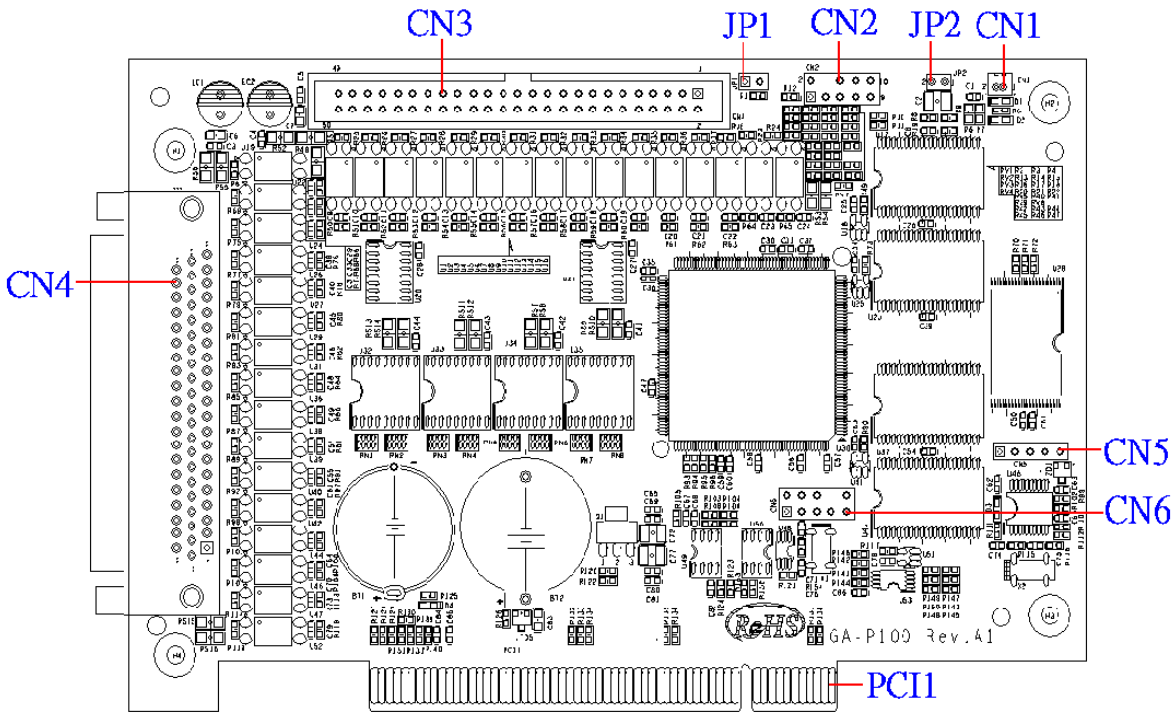
- 2.4.5 : CPU FAN for CPU Fan connector

CN5: 1 x 3 wafer			
Pin	**Signal**	**Pin**	**Signal**
1	GND	2	+12V
3	Sense		



2.5 Gaming I/O Pin Definition

Board Connector

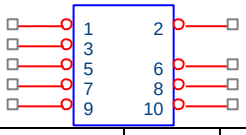


Connector List

Connector	Description	Connector	Description
CN1	Test Pin Headers	CN2	FPGA Download Pin Headers
CN3	2*25 Pin Headers (I/O)	CN4	62 Pin D-SUB Connector (I/O)
CN5	Microchip Download Pin Header	CN6	Test Pin Headers
JP1	DOOR6 Pin Headers	JP2	Test Pin Headers
PCI1	PCI Interface		

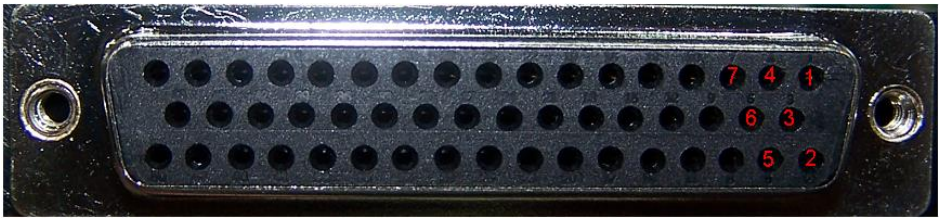
Connector/Jumper Setting

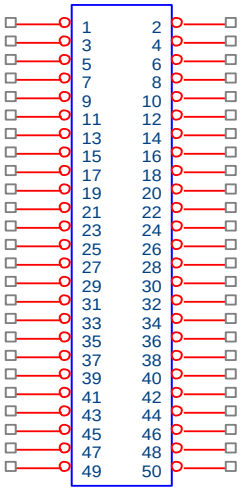
CN2: FPGA Download Pin Headers



Pin	Define	Pin	Define
1	FTCK	2	GND
3	FTDO	4	NC
5	FTMS	6	VJTAG
7	VPUMP	8	FTRST
9	FTDI	10	GND

CN3: 2*25 Pin Headers (I/O)

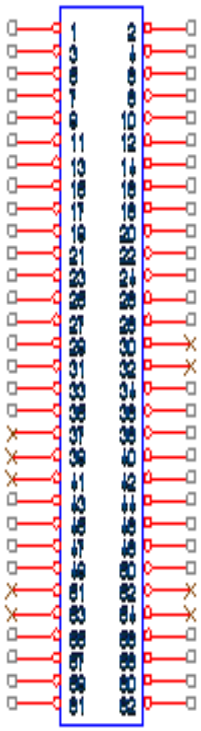




Pin	Define	Pin	Define
1	In16	2	Out24
3	In17	4	Out25
5	In18	6	Out26

7	In19	8	Out27
9	In20	10	Out28
11	In21	12	Out29
13	In22	14	Out30
15	In23	16	Out31
17	In24	18	GND
19	In25	20	GND
21	In26	22	DOOR0
23	In27	24	DOOR1
25	In28	26	DOOR2
27	In29	28	DOOR3
29	In30	30	DOOR4
31	In31	32	DOOR5
33	GND	34	GND
35	GND	36	GND
37	GND	38	GND
39	GND	40	GND
41	IO_+5V	42	IO_+12V
43	IO_+5V	44	IO_+12V
45	IO_+5V	46	IO_+12V
47	IO_+5V	48	IO_+12V
49	IO_+5V	50	IO_+12V

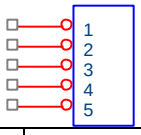
CN4: 62 Pin D-SUB Connector (I/O)



Pin	Define	Pin	Define
1	In0	2	Out0
3	In1	4	Out1
5	In2	6	Out2
7	In3	8	Out3
9	In4	10	Out4
11	In5	12	Out5
13	In6	14	Out6
15	In7	16	Out7
17	In8	18	Out8
19	In9	20	Out9
21	In10	22	Out10
23	In11	24	Out11
25	In12	26	Out12
27	In13	28	Out13
29	In14	30	Out14
31	In15	32	Out15
33	GND	34	Out16
35	GND	36	Out17
37	GND	38	Out18

39	GND	40	Out19
41	GND	42	Out20
43	GND	44	Out21
45	GND	46	Out22
47	GND	48	Out23
49	GND	50	GND
51	GND	52	GND
53	IO_+5V	54	IO_+12V
55	IO_+5V	56	IO_+12V
57	IO_+5V	58	IO_+12V
59	IO_+5V	60	IO_+12V
61	IO_+5V	62	IO_+12V

CN5: MICROCHIP Download Pin Headers



Pin	Define	Pin	Define
1	MCLR	2	+3.3V
3	GND	4	ICSPDAT
5	ICSPCLK		

JP1: DOOR6 Pin Headers

Pin		Setting
	OPEN	(Default)
	CLOSE	Event